nord stage EX

User Manual
Nord Stage EX

OS Version 6.x

Part No. 50250
Print Edition 6.0

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CAUTION - ATTENTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN
RISQUE DE SHOCK ELECTRIQUE
NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED PERSONNEL.

ATTENTION*:POUR EVITER LES RISQUES DE CHOC ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE.*
AUCUN ENTRETIEN DE PIECES INTERIEURES PAR L´USAGER.
CONFIER L´ENTRETIEN AU PERSONNEL QUALIFE.
AVIS*: POUR EVITER LES RISQUES D´INCIDENTE OU D´ELECTROCUTION, N´EXPOSEZ PAS CET ARTICLE A LA PLUIE OU L´HUMIDITET.*

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Le symbole éclair avec le point de flèche à l´intérieur d´un triangle équilatéral est utilisé pour alerter l´utilisateur de la presence à l´intérieur du coffret de "voltage dangereux" non isolé d´ampleur suffisante pour constituer un risque d´éléctrocution.

The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Le point d´exclamation à l´intérieur d´un triangle équilatéral est employé pour alerter l´utilisateur de la présence d´instructions importantes pour le fonctionnement et l´entretien (service) dans le livret d´instructions accompagnant l´appareil.

Instructions pertaining to a risk of fire, electric shock or injury to persons.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

Warning - When using electric products, basic precautions should always be followed, including the following:

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Additional Safety Information

No naked flame sources, such as lighted candles, should be placed on the apparatus;

Il convient de ne pas placer sur l´appareil de sources de flammes nues, telles que des bougies allumées;

Do not use the apparatus in tropical climates.

L´appareil n'est pas destiné á étre utilisé sous un climat tropical.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

L´appareil ne doit pas étre exposé á des égouttements d´eau ou des éclaboussures et de plus qu´aucun objet rempli de liquide tel que des vases ne doit étre placé sur l´appareil.

The maims plug is used as the disconnect device and shall remain readily operable.

Lorsque la prise du résau d'alimentation est utilisée comme dispositif de déconnexion, ce dispositif doit demeuré aisément accessible.

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1. Introduction

Welcome

We'd first like to thank you for purchasing the Nord Stage EX Eighty Eight/Seventy Six/Compact! Clavia's goal when developing the Nord Stage was to create a flagship stage instrument encompassing the whole range of Clavia's expertise. Building on the success of the Nord Electro, the Nord Stage incorporates the best emulations of traditional electromechanical/acoustic keyboard instruments on the market as well as a synthesizer section designed for maximum ease of use, yet offering wide sonic possibilities.

The Nord Stage EX features outstanding classic keyboard sounds with true feel, from natural keyboard response to authentic sound. A medium weighted hammer action 88/76 note keyboard, or a 73 note semi-weighted waterfall keyboard makes this instrument the largest in Clavia's range, yet it weighs only 18,5/16,5/9,7 kilos which is an achievement in itself.

To make a great tool you have to put all the focus on a few things, and that's what we did with the Nord Stage. Think about it, the *best* tool isn't a Swiss army knife.

Features

The Nord Stage EX has the following main features:

- Organ section with faithful reproductions of three classic models; B3 (Hammond), V-Type (Vox Continental) and F-Type (Farfisa).
- Piano section with concert grand/upright acoustic pianos, Electric Pianos and Wurlitzer electric pianos, Clavinet, and Electric Grand. The total memory capacity in the Stage EX units is 256 MB. The available space for the pianos is a bit smaller, part of the memory is used for the wavetables.
- Synth section with subtractive, FM and wavetable synthesis.
- Comprehensive effects section.
- A medium weighted hammer action 88/76 note keyboard with Aftertouch, or a 73 note semi-weighted waterfall keyboard with Aftertouch.
- An Extern section for controlling external MIDI instruments.
- A Morph feature for applying multiple parameter changes to a sound with controllers.
- Splits and layers are easily set up by assigning instruments to Keyboard Zones.

But that's not all. There are two independent Panels "A" and "B", each containing a full setup of the Stage instruments. This means that you have access to six instrument sections and two independent effect sections! Amongst other things, this allows for "dual manual" B3 organ emulation, and easy setup of all kinds of instrument layering and splits.

About the Owner's Manual

The manual is arranged mainly as a reference manual. In many cases you'll get tips on how to practically use the functions, alone and also together with other functions. Every time the manual wants your attention to an object on the Stage, the name of that object will be printed **LIKE THIS,** e.g. **'**press the **STORE** button**'**. The LCD display on the Nord Stage EX is always referred to as the **DISPLAY**. Whenever there is a reference to the 'keyboard', that reference also applies to any incoming MIDI note messages.

Reading the manual in Adobe Acrobat Reader

This manual is also available in the digital PDF-file format. It can be downloaded, free of charge, from Clavia's web site at http://www.nordkeyboards.com. When reading the manual as PDF-file, you will need Adobe Acrobat Reader 4.0 or later.
This program can be downloaded, free of charge, at http://www.adobe.com.

With Adobe Acrobat Reader it is possible to use special navigation features like hyperlinks. This means that you can click with the mouse on a word or sentence and automatically get to the location indicated by the word/sentence. To better show what words or sentences are hyperlinked in this manual, these words are written in magenta.

Nord on the Internet

If you have access to the Internet, you're very welcome to visit http://www.nordkeyboards.com. There you will find the latest information about Nord Stage EX and other Nord products. You can also download new Nord Stage EX sounds and software upgrades, free of charge.

2. Overview

The Nord Stage EX front panel

Organ section
Program section
Synth section
Effects section
Master Level/Rotor effect section
Piano section
Extern section

The program section

The central Program section is where you select and store Programs, access System parameters, activate keyboard zones for splits and layers, and assign Morphing functions. See "The Program section" on page 16 for details.

Master level/Rotor section

The leftmost front panel section contains a Master Level control and a rotary speaker simulator effect.

The **Master Level** knob controls the overall output level for all four **Ch Out** jacks and the **Headphones** output.

The Rotor effect section is logically placed close to the organ section (as rotary speaker effects are most commonly used with organ sounds), but can be applied to any instrument section just like the other effects. See "The Rotor section" on page 55

The Organ section

The Organ section in the Stage features emulations of three classic organ models; a Hammond B3, a Vox Continental II (V-Type) and a Farfisa Compact DeLuxe (F-Type). See "The Organ Section" on page 24.

The Piano section

The piano section in Nord Stage EX comprises various multi-sampled piano instruments. The Nord Stage EX utilizes advanced multi-level sample playback, catching every nuance from soft to hard key strokes. Nord Stage comes right out of the box with several classic piano instruments stored in a Flash memory with a total capacity of 256 MB. The big advantage with Flash memory is that you can replace instruments with new ones and that no backup battery is required. The Stage also sports a USB interface for quick and easy download of new piano sounds. See "The Piano section" on page 30.

The Synth section

The Synth section has been designed for maximum ease of use in live situations, while keeping flexibility and sound control. It is based on standard subtractive synthesis, with a very flexible oscillator section that can produce all common analog-style waveforms, up to three-oscillator FM synthesis, and a bank of carefully designed wavetables for those unusual timbres. The synth also sports a high-quality resonant low-pass filter with selectable slope, two envelopes, a simple EQ, and a very powerful Unison mode.

See "The Synth section" on page 34.

The Extern section

The Extern section controls an external MIDI instrument. You can use the **Parameter** knob to control various parameters on the external device. You can also assign the external instrument to any Keyboard Zone, just like the built-in instruments! See "The Extern section" on page 63.

The Effects section

Here you'll find the numerous effects and modulations you can use to add that extra flavour to your sounds. See "The Effects" on page 49.

The Keyboard

The keyboard of the Nord Stage EX features 88/76 medium weighted keys or 73 semi-weighted waterfall keys for optimal feel and response with piano instruments. For organ sounds there is also a fast trigger response option which closely mimics the feel of a real organ.

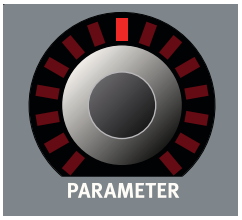
The keyboard can be split into three Keyboard Zones to which any instrument section can be freely assigned. Assigned Keyboard Zones are saved with a Program. See "Keyboard Zones and Dual Panel setups" on page 56.

About Knobs & Buttons

The knobs

There are two types of knobs on the Nord Stage EX:

- Rotary Encoders that show the position with red LED indicators. These always reflect the "true" value, and can also be controlled using the Morph function (see "About Morph Assign" on page 60).



- Other knobs are of the potentiometer type. After you load a program, the corresponding parameter may not correspond to the actual position of the physical knob. As soon as you begin turning a knob, the parameter value will 'snap' to the knob's physical position. The display will indicate the parameter value if the corresponding section is active, with an exception for the Effect parameters. These will be shown regardless of the Effect sections active status.

The buttons

There are three types of buttons for editing sounds on the Nord Stage EX:

Selector buttons

Press the **Selector** button repeatedly to select between options printed next to the corresponding triangular LED (see figure).

On/Off buttons

The **On/Off** buttons have a LED next to them to indicate the status.

Drawbar buttons

The **Drawbar** buttons are special in the way that they auto-increment/decrement the corresponding parameter when held. I.e. if you hold a **Drawbar** button the corresponding drawbar parameter will continue to increment or decrement (within its range) until you release the button.

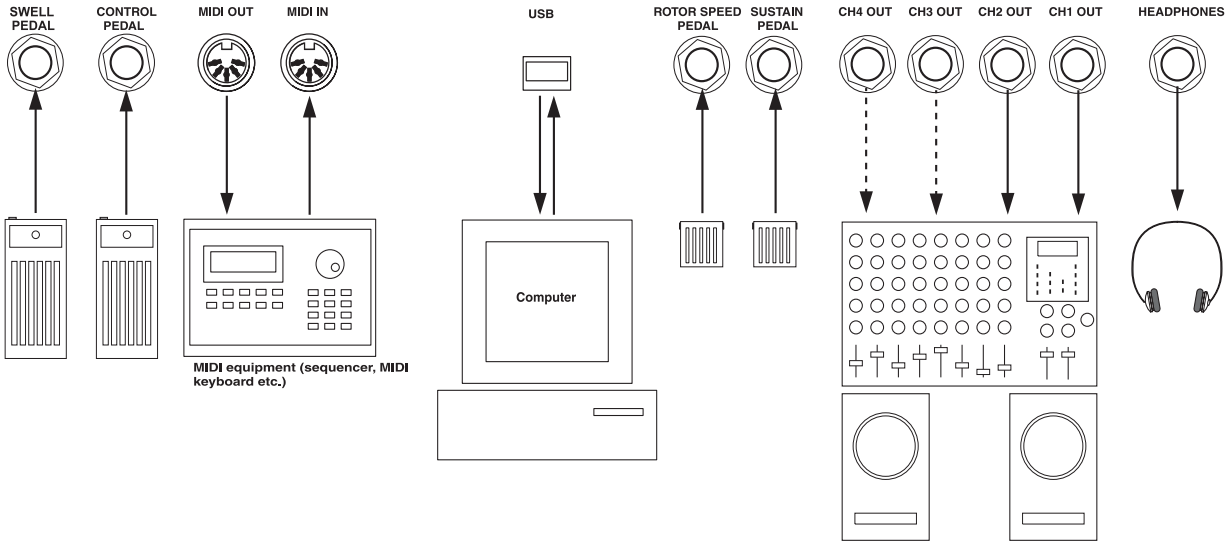
The Shift Button

Many buttons and knobs have a second function, printed in darker text just below the button or knob. You access these additional functions and parameters by holding **Shift** while pressing a button or turning a knob.

The **Shift** button is also an **Exit** button, used for example to exit menus and store operations.

3. Connections

Nord Stage EX rear panel



Audio connections

- Make all audio connections before turning on your power amplifier!
- All signal cables used with the Nord Stage EX must be shielded.
- The four audio outputs (**CH Out 1-4)**) are line level and unbalanced.
- If you wish to connect the Nord Stage EX in stereo to your audio equipment, you should use **CH1 Out** in pair with **CH2 Out**.
- You can also route individual instruments to **CH Outputs 3 & 4** either in stereo or as two mono channels. This is done on the System page - see page 66.

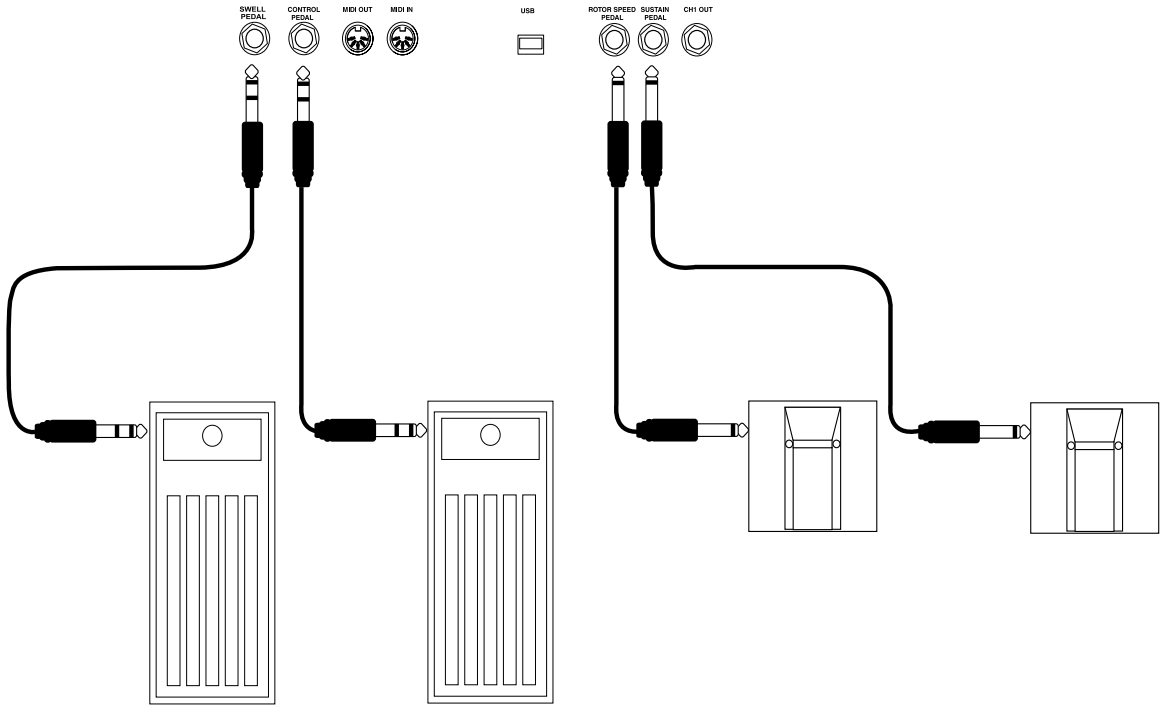
MIDI connections

- If you are using a Nord Stage EX together with a MIDI keyboard, connect a MIDI cable from MIDI Out on the keyboard to **MIDI In** on the Nord Stage EX.
- If you are using Nord Stage EX to control an external MIDI instrument, connect a MIDI cable from **MIDI Out** on the Nord Stage EX to the MIDI In connector on the other instrument.

Connecting pedals

The Nord Stage EX has four pedal inputs: one **Control Pedal** input (configurable to control various Nord Stage EX parameters), one **Organ Swell** input, one **Sustain Pedal** input and one **Rotor Speed** input (for rotary speaker fast/slow selection). You can select for each instrument whether it should react to sustain or not (see "Activating the Sustain Pedal/Pitch Stick for Instruments" on page 22). Connect the pedals as shown in the figure below:

When connecting an expression-type pedal to the **Control Pedal** or **Organ Swell** input, you should use a stereo cable (Tip-Ring-Sleeve). Please note that the pedal must have a stereo output jack. Pedals from various manufacturers have different characteristics. To simplify setup, the most common pedal models (Roland, Yamaha, Ernie Ball and Fatar) are preconfigured in the Nord Stage EX, and you simply select the type of pedal in the System menu. See "Ctrl Pedal Type" on page 67 for more information about this setting.



The Organ Swell input

You can connect an expression pedal to the **Organ Swell** input to control organ swell. For the B3 organ, the characteristic swell volume/frequency response is faithfully reproduced. If you want to control the entire Stage's volume with a pedal, this can be set in the System Settings to apply to a pedal connected to the Organ Swell input. See "Swell Pedal Dest" on page 68 for more information about this setting.

Using a Rotor Speed pedal

You can use a pedal connected to the **Rotor Speed** input to switch between Slow and Fast rotor speed for the Rotary Speaker effect. This pedal can work in hold or toggle mode, which is set in the System Menu (see page 66).

4. Getting Started

About Instruments

When “Instrument sections” or “Instruments” are referred to in the manual, this is a collective reference to the Organ, Piano and Synth instruments which can be all be active within a Program.

About Programs

A Program in Nord Stage EX basically contains all settings (instruments and effects etc.) when the Program was saved. A Program can consist of a single instrument or a combination of up to six instruments and two Extern sections, which can be assigned to one ore more Keyboard Zones for split and layered sounds.

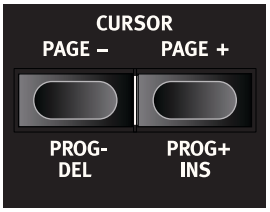
Programs also contains settings for both Panel A and B (see “About Panel A & B” on page 14.

For more details about the Program memory architecture see “What is a Program?” on page 19.

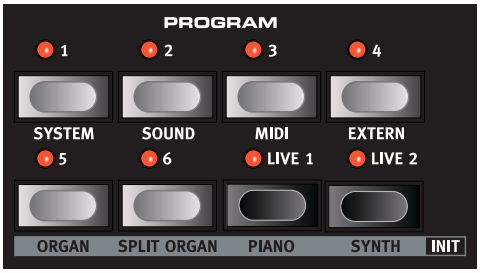
Selecting Programs

The Program memory in Nord Stage EX consists of 21 Program Pages, with each Page holding 6 Programs for a total of 126 Programs. All Programs can be edited and replaced at any time. To select a Program for playing/editing, proceed as follows:

1. Select a Page (1-21) by pressing the **Page -/+** buttons in the Program section. Hold a **Page -/+** to scroll quickly through the Program Pages.



2. Select a Program on the current Page by pressing one of the six **Program** buttons 1 to 6.



- You can also use the **Value Dial** to the right of the **Display** to select Programs. By turning the knob you can continuously scroll between all Programs (on all Pages).

Editing a Program

Actually, how to change a programmed sound can be described in one sentence: "tweak the knobs and press the buttons". It *is* as simple as that! Don't be afraid to edit and overwrite the factory Programs. If you want to restore any of the original factory programs later, you can download them at http://www.nordkeyboards.com and transfer them to your Nord Stage EX as MIDI SysEx files or use the Nord Sound Manager to reload them. To indicate that a Program has been edited (changed from the stored version), an asterisk (*) is shown to the right of the Program number in the **Display**.

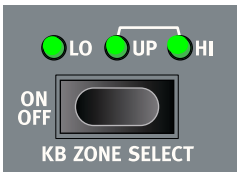
Reverting to the original Program

If you have edited a Program and want to revert to the stored original, just press the corresponding **Program** button again.

Storing and Naming Programs

How to store and name Programs is described in a separate chapter - see "The Program section" on page 16.

Activating instrument sections



There are three main instrument sections in Nord Stage EX: the Organ section, the Piano section and the Synth section. You can activate/deactivate instrument sections in the following ways:

- Pressing the **KB Zone Select On/Off** button for an Instrument section so that one or more of the LEDs lights up will activate the corresponding instrument. If all LEDs are lit, the instrument will play across the whole range of the keyboard. Any other active instrument(s) will in this case be layered with the instrument you just activated.
- Pressing the **KB Zone Select** button for an active Instrument section (so that the LEDs go dark) will turn off the corresponding section.
- For information on how to use splits see the chapter "Keyboard Zones and Dual Panel setups" on page 56.

Instrument Inits

Alternatively, you can use the following method to select one of four basic **Instrument Init** setups (Init-Organ/Init-Split Organ/Init-Piano/Init-Synth). This will activate the corresponding instrument, and deactivate all other instruments.

1. Hold down the **Shift** button.
2. Press one of the **Organ, Split Organ, Piano or Synth** buttons in the Program section to activate the corresponding instrument section. The "Split Organ" setup uses a split for a Lower/Upper manual organ where the lower half of the keyboard plays an organ belonging to Panel A and the upper half plays Panel B (see "About Split Organ Setups" on page 29).

About Panel A & B

All instruments in Nord Stage EX are two part multitimbral. This means that each instrument section can produce two sounds simultaneously, with completely independent settings. The key to this feature are the two Panels; A and B.

The two **Panel** buttons **A** and **B** selects which Panel is currently active (or edit active - see below). Each Panel controls three instrument sections and four Panel effects. Having two Panels with their own settings not only allows you to alternate between two sound setups within a selected Program. It also lets you have both Panels activated, giving you access to two simultaneous instruments in each section, e.g. a Electric Piano and a Clavinet, two Synths etc. In dual panel mode you are basically layering two full sets of the Nord Stage EX panel.

- You activate both panels by holding down one of the **Panel A/B** buttons and then pressing the other.
- To exit "Dual Panel" mode, hold down one of the **Panel A/B** buttons and then press the other.
- To copy the settings from another Panel to the active Program/Panel, press and hold one of the Panel buttons and turn the Value dial. The display will indicate which of the Panels in the entire Program memory of the Stage that will be copied to the current Program/Panel. Don't forget to save any new Panel combination that you have created using this method if you want to keep it.

About Panel edit focus

Both Panels activated. One of the **Panel** *button LEDs will blink to indicate which Panel is currently has the edit focus.*

If both Panels are activated, the settings on the front panel always reflects settings for one of the Panels (A or B) at a time.

- Any tweaking of parameters will only affect the Panel that has "edit focus", which is indicated by a blinking **Panel** button.
- If you select pianos to both Panels, they can be detuned by using the Unison Detune feature.
- Pressing the other **Panel** button will then instantly switch edit focus to the other Panel and allow you to edit the settings.
- Each Panel contains independent settings for the Organ, separate instances of two instruments (Piano and Synth), one Extern section, as well as four Panel effects (Effect 1/2, Delay and Amp-Sim/EQ).
- Thus, within a single Program you can use up to six instruments, two external instruments and eight independent effects.

Setting output Level for instruments

Each instrument has a **Level** rotary encoder at the top of the panel. This adjusts the output level for the corresponding instrument section. The **Level** encoders can be controlled in a Morph scenario.

Adding a Global effect

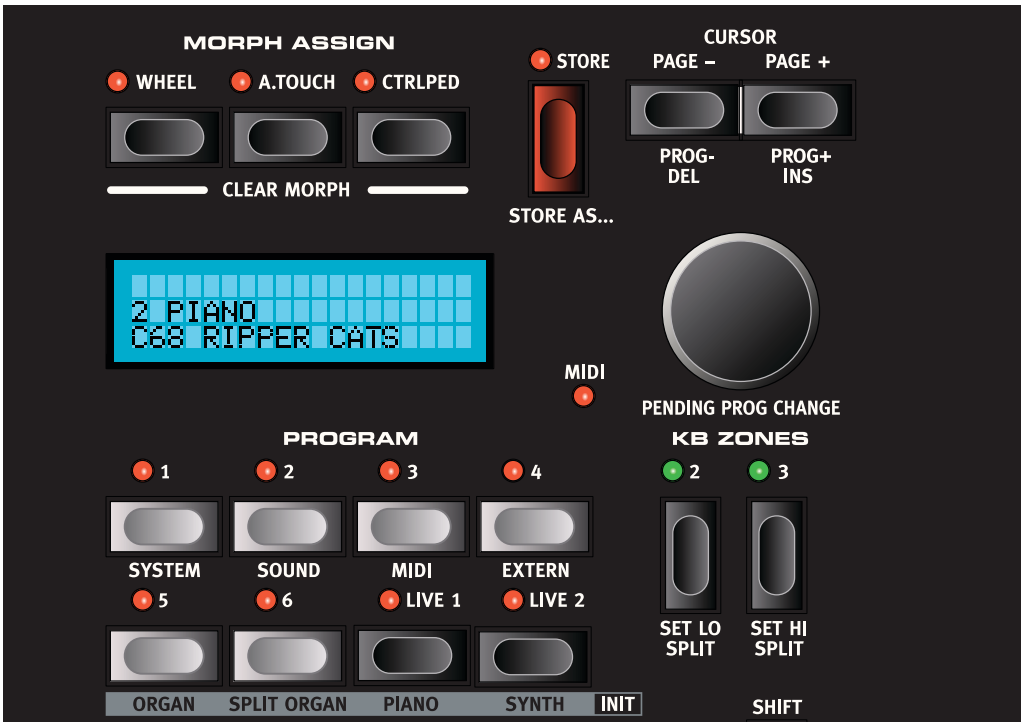
Nord Stage EX features four effect groups; the Rotor section (rotary speaker effect), the Effects section (three separate effects units; Effect 1, 2 and Delay), the Ampsim/EQ section (overdrive and amplifier/speaker modelling with EQ), and a Compressor and Reverb section. The Compressor and Reverb effects are global, and affect all instruments routed to the main **CH OUT 1/2** jacks. The Rotor can process the same instrument from both panels (Organ A&B, Piano A&B or Synth A&B). The other effects can process one freely selectable instrument per Panel.

- To add a global reverb effect to a sound, simply press the **On** button in the Reverb section.

Now you can adjust the amount of reverb effect using the **Dry/Wet** knob, and set the basic reverb character (Hall/Hall soft/Stage/Stage soft/Room) using the Selector button!

How to use the other effects is described in the Effects chapter, see "The Effects" on page 49.

5. The Program section



Overview

The Program section comprises central functions such as Program handling, system pages etc. System pages are covered in a separate chapter - see “System functions” on page 66.

Load a program

You can load a program in several different ways.

- Press any of the **Program 1-6** buttons to load the corresponding program from the current Program Page.
- Press or hold **Page** + or - to step through the 21 Program Pages in the Nord Stage.
- Turn the **Value Dial** in either direction to scroll through all Programs. Program Page focus is shifted as needed.
- Hold **Shift** and press or hold the **Page** buttons to step through the Programs. Program Page focus is shifted as needed.
- Press either of the **Live 1-2** buttons to activate one of the special Live Buffers (see “About the Live 1&2 Buffers” on page 19).

Pending program change

Normally a program is loaded the same moment you press a **Program** button, or as soon as you turn the **Value Dial**. Sometimes you may want to browse through the programs without leaving the current program, for example while still playing with the other hand. Then you can use the "pending program change" feature:

- While pressing **Shift**, turn the **Value Dial** until you see the program you want to load in the **Display**. Release the **Shift** button. The corresponding **Program Button** will flash to show you that it is ready to load. Press the flashing button to load the program.
- If you change your mind, press **Exit (Shift)** to cancel the operation.

Page -/+ buttons

The **Page -/+** buttons are used to select Program Pages and to navigate between System menu pages. Hold either button to browse quickly through the pages.

When combined with the **Shift** button, the **Page** buttons step through all the 121 available Programs.

Display

The **Main Display** normally shows the name of the currently selected Program, but is also used for displaying various system parameters and messages.

The Shift / Exit button

Many buttons and knobs have secondary functions that you can access by holding down **Shift** and pressing the button or turning the knob. The Shift induced functions are always printed below the corresponding button or knob. For example, pressing **Shift + Program 3** button will allow you to access the MIDI system parameters.

In a few cases, the "shift" functionality can be achieved by double-clicking a button. This works primarily with Keyboard Zone assignments and Effect source selects.

The **Shift** button is also an **Exit** button, for example when you want to exit a menu, or cancel a Store operation.

Value Dial

The **Value Dial** to the right of the **Display** is used to select Program locations, to set system parameter values and to "type" in Program names.

When used with the **Shift** button, the **Value Dial** selects a Program, but does not load it until you press the corresponding, blinking **Program** button. See "Pending program change" above.

The Store button

The red **Store** button is used when storing Programs (see "Storing Programs" on page 20).

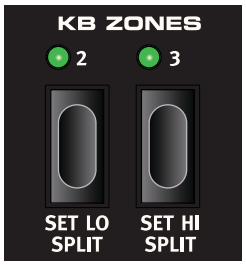
Program buttons

Below the **Display** are the six **Program** buttons (**1- 6**). They are used to load Programs, to access menus and to load either of the two Organ Inits.

The Live 1/2 buttons

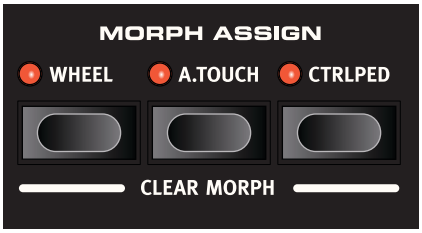
Pressing either of the **Live 1/2** buttons will activate a Live buffer - see "About the Live 1&2 Buffers" on page 19 for a description of this special memory feature. They are also used to load the Piano and Synth Inits.

KB Zones 2/3 buttons



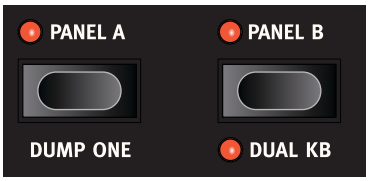
These buttons are used to activate keyboard zones. Each Program can have up to three keyboard zones (Lower/Upper/High), and each instrument section can be set to play across all, two or one of these zones - see "Keyboard Zones and Dual Panel setups" on page 56.

Morph Assign buttons



This section allows you to assign panel parameter(s) to be controlled using the Mod wheel, a control pedal or keyboard aftertouch. Multiple parameters can be Morph-assigned so that when you for example move the Mod wheel it will change the drawbars settings for the organ and the volume of the piano section simultaneously. See "The Morph Assign feature" on page 60.

Panel A/B buttons



For each Program you have two independent Panels; A and B, where each Panel contains independent instances and settings of the three instrument sections and effects. If you activate both Panels you can use two instruments of the same type at the same time, e.g. two Piano instruments or a Split Organ setup (see "About Split Organ Setups" on page 29. This is done by simultaneously pressing both **Panel A** and **B** buttons. When both panels are active you have access to six instrument sections and eight effects sections (Effect 1 & 2, Delay and AmpSim/EQ x2).

One of the **Panel A & B** buttons will then blink to indicate edit focus, i.e. which of the two Panel's settings that are currently shown and can be tweaked. To switch edit focus to the other Panel, press the corresponding **Panel** button.

To copy the settings from another Panel to the selected Program/Panel, press and hold one of the Panel buttons and turn the Value dial. The display will indicate which of the Panels in the entire Program memory of the Stage that will be copied to the current Program/Panel.

What is a Program?

A Program basically stores everything (except System functions which are mostly global). To understand the internal architecture in Nord Stage EX, keep the following in mind:

- For each **Panel**, settings for all three Instruments, the four Panel Effects, and the Extern section are independent (except the choice of organ model, which is always shared between the panels).
- A **Program** stores settings for both Panel A and B, so a Program contains independent settings for six instruments, eight Panel Effects, and two Extern sections.
- A Program also stores all settings from the Extern menu, except the Extern A & B MIDI channels and the Send on Load setting (see "Extern menu" on page 70), and the output routings for each instrument (see "System menu" on page 66).
- The Global effects (Compressor/Reverb) and the Rotor effect affect both Panels, and are stored with the Program as well.
- Splits, layers (Keyboard Zones) and Morph assignments are of course also part of a Program.

About the Live 1&2 Buffers

The special Live memory feature can be described as a "live program memory". If you activate the **Live 1 or 2** buttons, all changes to panel settings you make will be continuously saved. If you switch the power off, or select another Program, the settings are still stored in the Live memory, so when you power up next time (or return to the Live memory) all settings will be exactly as you left them.

Having two Live memory locations means that two independent setups can be "saved" in this way.

If Live memory is selected and you decide you wish to store the settings permanently as a Program you can do so using the standard methods (see below).

You can also store Programs into the Live 1 or 2 memory locations, in which case the Program settings will replace the current Live memory settings. Note that when you store a Program into either of the Live memory locations, the stored settings will be "transferred" to Live memory, i.e. any changes you make will be stored continuously, and you will not be able to revert back to the exact settings as they were when "stored".

The Live buffers are useful, e.g., for improvisatory performances, and as scratch pads for new sound setups.

Storing Programs

Storing a Program will overwrite the existing Program in the selected memory location.

Note! When Nord Stage EX is shipped from factory, Memory Protect is set to 'On'. To be able to store Programs, you need to change this to "Off". See "Memory Protect" on page 68.

Storing a Program

You can store a Program in two ways, with the old name or with a new name. To store a Program without changing its name, proceed as follows:

1. Press the **Store** button once. The **Store** button and the currently selected **Program** button indicator starts blinking, and the **Display** will read "Store to X : X" (the current Page and Program number), plus the Program name,

2. Next step is to select a Page/Program location to store the edited Program in. You can use the **Page -/+** buttons to select a Program Page (1-21), and the **Program 1-6** buttons to select a Program number on the selected Page (or the Live 1 or 2 memories). Alternatively, you can use the **Value Dial** to scroll through all Programs (on all Program Pages). To cancel the operation, press **Exit (Shift)**.

• From here you can opt to name the program before finally storing it - see "Naming a Program" below.

3. Press **Store** again to store your Program. The Display now reads "Program Stored!" for a short duration.

Naming a Program

To name a program, proceed as follows:

1. Hold down **Shift** and press the **Store As...** button once. The **Store** button indicator starts blinking, and the **Display** will read "Set Name".

2. Now use one of the following methods to name your Program:

- You can move the cursor position left or right in the **Display** by using the **Page -/+** buttons.
- When the cursor is at the position where you want to enter/change a character, you can use the **Value Dial** to scroll through all available characters (a-z.A-Z, 0-9, Space and "-").
- By holding down **Shift** and pressing the **Ins (Page +)** button, you enter a blank step at the cursor position.
- By holding down **Shift** and pressing the **Del (Page -)** button, you erase the character at the cursor position.
- Alternatively, you can press and hold down the **KB Zones 2 or 3** button. This will bring up the characters in the **Display** with the focus on the character the cursor was last on. You can now use the **Value Dial** to select a character at the current cursor position. When you release the **KB Zones** button the cursor automatically moves to the next position.

3. Press **Store** again. Now you can use the same methods as outlined in "Storing a Program" above to store your name with the Program.

6. The Instruments

Introduction

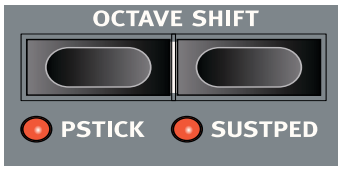
The Nord Stage EX features 3 different Instruments; Organ, Piano and Synth. Each Instrument is two part multitimbral meaning that there are actually two independent sound engines for each Instrument. These "engines" are internally connected to the Panels, one for Panel A and another for Panel B. The Organ behaves a little differently in that there is actually only one "engine" but it supports two manuals with separate drawbar settings - see "About Split Organ Setups" on page 29.

Common Features

Activating the Sustain Pedal/Pitch Stick for Instruments

You can freely set which instruments should respond to a connected Sustain Pedal and to Pitch Bend.

- To activate the Sustain pedal for an instrument, press **Shift** + **Sustped** button in the corresponding instrument section so that the **Sustped** LED lights up below the button. You use the same general method to deactivate reception of Sustain for an instrument section, which in that case turns off the **Sustped** LED indicator.
- To activate Pitch Bend for an instrument section, press **Shift** + **Pstick** button in the corresponding instrument section so that the **Pstick** LED lights up.

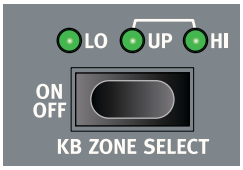


The bend range is fixed to -/+ 2 semitones.

Level encoder

The **Level** rotary encoder allows you to adjust the volume for the instrument. Instrument level can be Morph controlled.

KB Zone Select buttons



The **KB Zone Select** buttons allow you to assign the instrument to Keyboard Zones to create splits and layers. This is described in "Keyboard Zones and Dual Panel setups" on page 56.

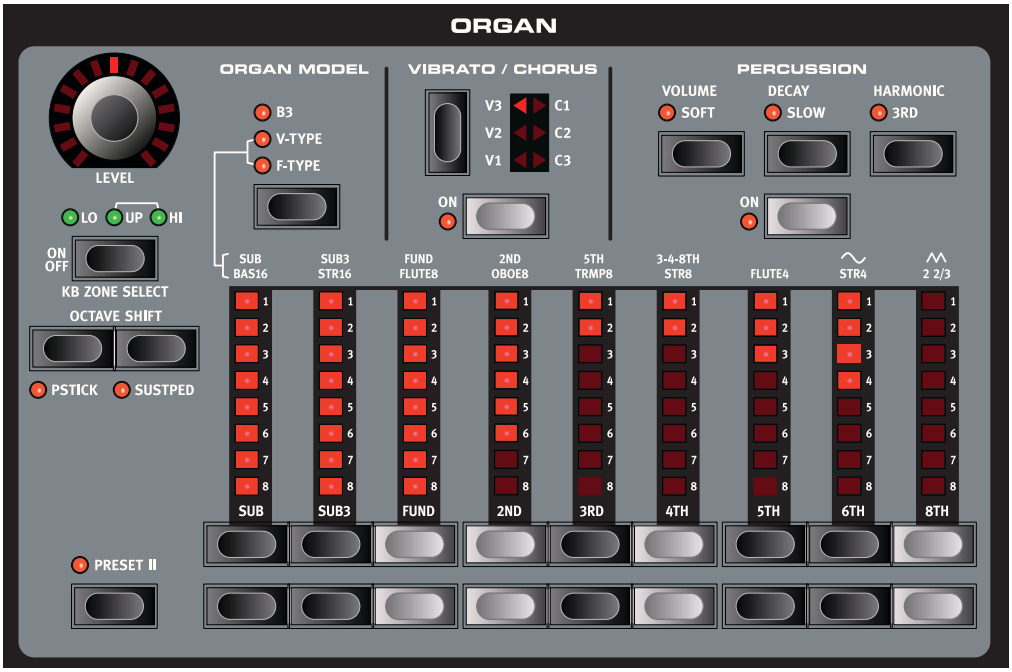
Octave Shift

Each instrument has a finite note range. You can use Octave Shift to shift the pitch up or down within the instruments note range. See "Octave Shift" on page 58 for more information.

Output Routing

The Nord Stage EX has four audio outputs. Each instrument can be freely assigned to output 1&2 (default) or 3&4 in stereo, or to output 3 or 4 in mono. The output routings can be set for each program, or globally for all programs, which is the default setting. In global mode, the routing settings stored with the program are overridden by the global settings. See "System menu" on page 66 for more information about the output routings.

The Organ Section



The Organ section in the Stage features emulations of three classic organ models; a Hammond B3, a Vox Continental II (V-Type) and a Farfisa Compact DeLuxe (F-Type).

You select which model to play using the **Organ Model** button.

The B3 Model (Hammond)

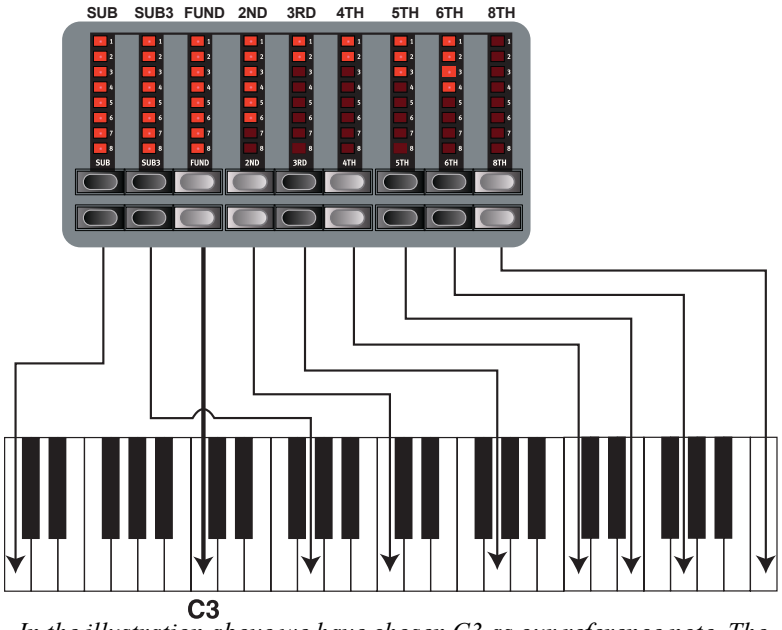
The B3 Organ in the Nord Stage EX is based on a digital simulation of the mechanical tone wheels of the classic Hammond B3 organ. This simulation utilizes innovative and advanced methods to capture every nuance of the original B3 sound, for example:

- An extremely accurate digital model of the original chorus and vibrato scanner.
- Modeling of the individual random contact bounces for each harmonic.
- Modeling of the unique frequency characteristics of the built-in pre-amplifier which forms the ”body” of the B3 sound.
- Simulation of the energy robbing on the tone wheels that results in the typical ”compressed” sound.
- Authentic tuning of the tone wheels according to the original B3 design.
- Extremely fast keyboard response.
- Full polyphony.

The Drawbars

The drawbars of Nord Stage EX are represented by buttons and LED chain graphs instead of ordinary mechanical drawbars. This gives you a big advantage: when you change preset or Programs, the correct drawbar settings are recalled immediately and shown by the LEDs. In other words, no need for the regular ’trial and error’ method. It’s very easy to get the hang of changing the drawbar settings in a natural way with the buttons.

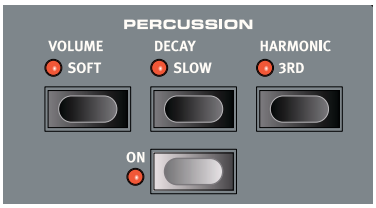
The drawbars of Nord Stage EX behave similar to their mechanical counterparts, i.e. you "pull out" the drawbars by pressing the **LOWER DRAWBAR** buttons and "push them back in" by pressing the **UPPER DRAWBAR** buttons. The **DRAWBAR** buttons are special in the way that they auto-increment/decrement the drawbar value when held. I.e. if you hold a **DRAWBAR** button the corresponding drawbar value will continue to increment or decrement (within its range) until you release the button. Each drawbar represents a harmonic (sometimes called a partial). In the figure you can see the pitch interval among the nine drawbars. Note that the **SUB3** drawbar actually lies a 5th *above* the fundamental harmonic. However, in most situations it is perceived as sounding *below* the basic harmonic. When you play different notes on the keyboard, the harmonics are being transposed up or down with the fixed harmonic intervals.



In the illustration above we have chosen C3 as our reference note. The FUND drawbar is considered the basic (fundamental) harmonic in the organ sound. The arrows point at the respective note that each drawbar represents when C3 is our reference note.

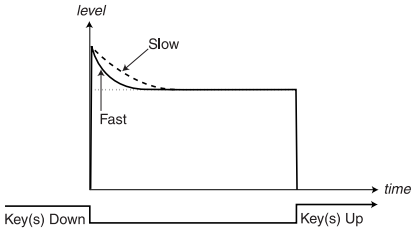
PERCUSSION

In the original B3 the Percussion effect is generated by a single envelope generator that controls either the 2nd or 3rd harmonic. The envelope "opens up" for a short moment in the beginning of the sound when you press the key(s).



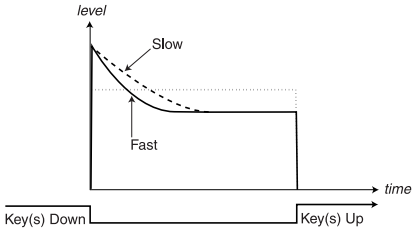
- You activate and deactivate the Percussion effect by pressing the **ON** button.
- The Percussion effect can be set to control either the 2nd (**HARMONIC 3RD** button LED Off) or 3rd harmonic.

• The envelope Decay time can be set to Fast (**DECAY** button LED Off) or Slow and the Volume characteristics to Normal (**VOLUME** button LED Off) or Soft.



The figure above shows the Percussion envelope in SOFT mode.

(The horizontal dotted lines represent the current drawbar level without Percussion).



The figure above shows the Percussion envelope in NORMAL mode.

Like on the original B3, the Percussion is a single-triggered non-legato effect. By "single-triggered" we mean that the percussion is only present when you hit the keys when no other note is sounding. In other words, if you play a note or a chord and then add on more notes without releasing the previously pressed keys, there will be no percussion effect in the new notes. You have to release all keys to be able to play new notes with the percussion effect. Also, like on the original B3, in Normal Percussion mode the sustain level is significantly lower than in Soft Percussion mode (or with the Percussion effect disabled).

VIBRATO

The original B3 chorus and vibrato scanner consists of a modulated delay line in combination with a rotating scanner. For the Vibrato effect, phase shift is applied to the signal. For the Chorus effect, the phase modulated signal is added to the original signal. A lot of time and effort have been spent in accurately recreating the chorus and vibrato scanner effect. Like on the original B3, Nord Stage EX offers three different types of choruses (C1-C3) and three different types of vibratos (V1-V3). Select one of these types by pressing the **SELECTOR** button. You activate and deactivate the Vibrato section by pressing the **ON** button.

KEY CLICK CONTROL

On an original B3 organ, the key click produced by the random contact bounces was originally an unintended audio artifact. This particular artifact later became a desirable effect amongst musicians. In the Nord Stage EX you can select the amount of key click that should be present in the B3 organ sounds.

1. Press the **SHIFT** + **SOUND** buttons to access the Sound menu page.

2. You use the **PAGE -/+** buttons to navigate to the Organ Key Click Level menu item.

3. Now you can use the **VALUE DIAL** to change the Click Level 0-100%. Default setting is 50%.

When you are done, press the **EXIT (SHIFT)** button.

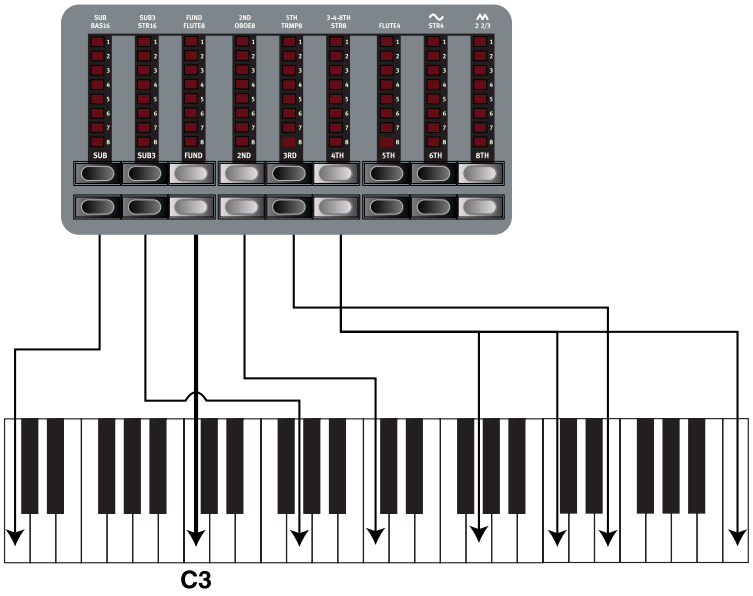
The V-Type Model (Vox Continental II)

The Vox Continental is probably the most famous of all the transistor-based combo organs that emerged in the early 60's. Transistor technology made it possible to manufacture much more compact and portable organ instruments. Compared to the mighty sound of tone-wheel based organs, transistor organs generally sounded reedier and weaker, but the Vox Continental had a distinctive sound character which together with the portability and cool design (inverse keyboard and chrome "Z-frame" stand) made the instrument massively popular at the time. The sound is timeless and recreated faithfully in Nord Stage EX.

The Drawbars

The original Vox Continental used drawbars to change the timbre of the sound. The harmonic intervals for the V-Type organ are printed on the upper row above the drawbars (see page 24 for a general description of how the drawbars work in Nord Stage EX).

In the figure you can see the pitch interval among the six drawbars used by the V-Type organ. Note that the 6th drawbar from the left controls three harmonics simultaneously (3rd-4th-8th). The two rightmost drawbars determine the mix of the two basic waveforms that make up the sound generating source of the organ sound, just like on the original. You have access to sine (soft) and triangle (bright) waveforms which can be freely mixed together. If these drawbars are both fully "pushed in", the organ will not produce any sound.



In the illustration above we have chosen C3 as our reference note. The FUND drawbar is considered the basic (fundamental) harmonic in the organ sound. The arrows point at the respective note that each drawbar represents when C3 is our reference note.

Vibrato

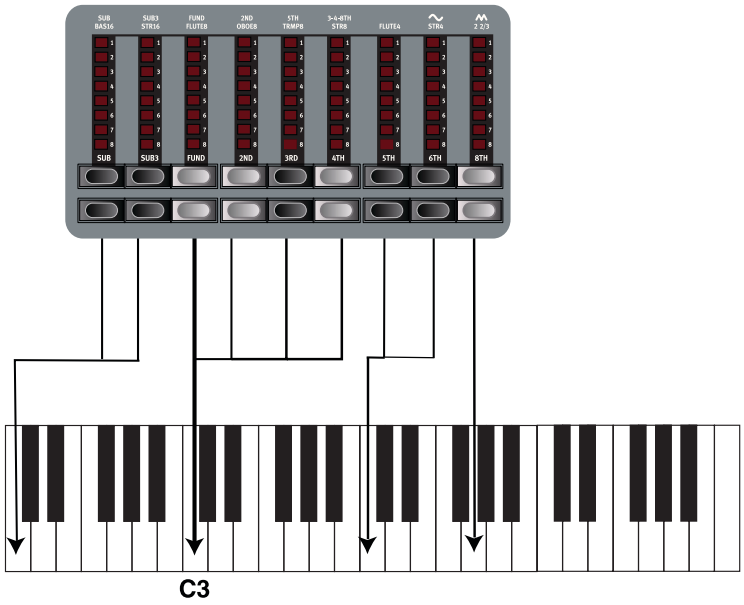
There is only one type of vibrato available for the V-Type, which is activated using the **On** button in the Vibrato section.Note that the V-Type vibrato is common for both Panels if a dual manual organ is used.

F-Type Model (Farfisa)

The typical "buzzy" sound of the Farfisa organ is one of the most distinct and easily recognizable keyboard sounds ever created, yet it is actually possible to get quite a wide range of sounds out of the instrument. For the Nord Stage EX a Farfisa Compact DeLuxe was used as the source model.

The Register selectors

The drawbars act as on/off switches, or "Register selectors" when the F-Type model is selected. Instead of drawbars, the original Farfisa organs featured "rocker"-type switches to select instrument "voices" (actually different filter settings) in various footage (octave) ranges. In Nord Stage EX, this functionality is reproduced. When the F-Type organ model is selected, the **Lower Drawbar** buttons are used to turn voices on, and the **Higher Drawbar** buttons turns them off. The drawbar LEDs 5-8 are lit up for an activated voice, and drawbar LEDs 1-4 are lit up for a deactivated voice. The available voices for the F-type (also printed on the panel directly over the drawbars) are as follows (from left to right):



In the illustration above we have chosen C3 as our reference note. The four 'Register selectors correspond to the fundamental harmonic (but with different tonal characteristics). The arrows point at the respective note that each drawbar represents when C3 is our reference note.

Register selector #	Voice	Panel Name
1	Bass 16	BAS16
2	Strings 16	STR16
3	Flute 8	FLUTE8
4	Oboe 8	OBOE8
5	Trumpet 8	TRMP8
6	Strings 8	STR8
7	Flute 4	FLUTE4
8	Strings 4	STR4
9	A bright voice, pitched an octave and a fifth above the fundamental.	2 2/3

Note that the voices aren't supposed to replicate the instruments they are named after, but rather to describe the basic tonal characteristic of the voice (i.e. flute=soft/oboe=reedy/strings=bright/trumpet=brassy).

Vibrato

The F-Type Model has two basic vibrato modes; “Light” and “Heavy”, with different rates for each mode. Slow/Fast rate for the Light mode is set with the V1/V2 Selectors and C 1/C2 sets the rate for Heavy mode. Note that the F-Type vibrato is common for both Panels if a dual manual organ is used.

Swell control

Swell is the characteristic volume function that you control from an organs pedal. Swell is not only a volume control - for the B3 it also changes the character of the sound in a special way. To use Swell control on the Nord Stage EX, simply plug in a standard expression pedal to the **Organ Swell** input on the rear panel (see “Connecting pedals” on page 11) and configure the pedal on the System Menu (see page 66).

A expression pedal connected to the **Organ Swell** input will control Swell for all organ models.

If you have only one expression pedal, it can be used both as a generic Control Pedal and a Swell Pedal. See “Control Pedal Use as Swell” on page 67.

Rotary Speaker

The Rotor section (rotary speaker simulation) is logically placed next to the Organ section, but you can also use it for Piano or Synth sounds, just like the other effects. The Rotor effect is described on page 55.

Organ preset I & II

For each Organ Model, and separately for Panel A & B, you can store two organ Presets within a single Program. This is a quick way of changing between two sound variations, without having to change Programs.

You change between Presets I & II by pressing the **Preset II** button. The drawbar settings and the Vibrato/Percussion (on/off) settings are stored in a Preset.

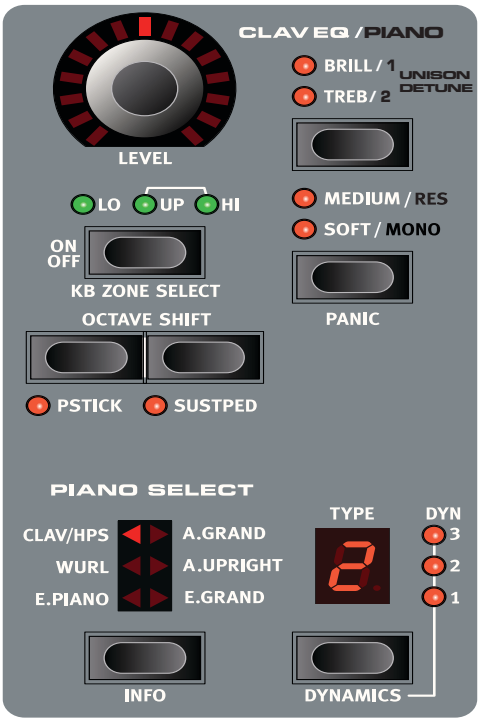
About Split Organ Setups

If you press **Shift** and the **Split Organ** button you will activate a basic Split Organ setup, where Both Panel A and B are active. In this mode the keyboard is split to play a “Lower” and an “Upper” Manual organ. Panel A settings control the Lower Manual and Panel B the Upper Manual. By default, the split point is set at middle C.

A blinking **Panel** button indicates which Panel is edit active, i.e. which of the two Panel’s settings are currently shown. To edit/show settings for the other Panel/Manual, press the corresponding **Panel** button.

Each Panel/Manual can have their own drawbar, Vibrato (on/off) and Percussion (on/off) settings.

The Piano section



The Piano section of Nord Stage EX contains six Piano Categories, and each Category can contain different instrument Types. **You can freely add new piano instruments via USB using the Nord Sound Manager utility** (see "Nord Sound Manager" on page 72)**.**

Right out of the box, Nord Stage EX features a fine collection of carefully selected acoustic and electromechanical pianos. A lot of effort was put in to ensure that the play response and sound of the sampled instruments matches every nuance of the real article. Each piano instrument has been multi-sampled in a vast amount of velocity levels. That's one reason why they all sound and feel so authentic.

About the Piano Instruments

Since all piano samples are stored in Flash memory you can easily add and/or replace the stored piano instruments with new ones, supplied free from Clavia. The size of the available memory for the piano samples is approx. 256 MB.

When you download Piano instruments, these will always automatically be loaded into the corresponding Category.

A Program saves Piano instruments by Category and the Type number. If a Program refers to a Piano instrument that isn't currently loaded, i.e. an empty Type slot, the Type display will blink showing the missing Type number. If this happens, you can either navigate to another instrument Type in the selected Category and select to use this instead, or use the **Nord Sound Manager utility to download an instrument into the empty Type location.**

Selecting piano instruments

You use the **Selector** button to select an instrument category and then use the **Type** button to select a specific instrument or variation within the selected category.

Category	Description
A.GRAND	Acoustic grand pianos
A.UPRIGHT	Acoustic upright pianos
E.GRAND	Electric grand pianos
E.PIANO	Electric Pianos
WURL	Wurlitzer electric pianos
CLAV/HPS	Clavinets and Harpsichords

About the Factory sound library

As mentioned previously, the Piano section is open-ended which means that you can load new or improved instruments using the Nord Sound Manager utility. Here is a description of the pianos that are included with the Nord Stage EX when it left the Nord factory:

Category	Type #	Description
A.Grand	1	Grand Lady D StwD Med. The Grand Lady D is a carefully voiced German Model D that has been carefully selected by us because of its special tonal characteristics. The unique voicing brings out the best of this 9-foot beast, you just add a bit of your talent to create wonderful musical moments..
A.Grand	2	Studio Grand 2 Ya C7. This is a Japanese grand that we meticulously prepared in order for it to be as expressive as possible. The mic's were positioned close to the strings and it is sampled in stereo. The medium version has additional pedal down resonance samples and can take advantage of the String Resonance feature.
Upright	1	Black Upright Petrof Sml. Our Black Upright is a Petrof 132 upright piano. It is a tall piano and typically used for musical schools, in clubs and homes.
Upright	2	Romantic Upright Schimmel Sml. Touch and tone are harmonized perfectly from the powerful bass notes up to the sparkling treble register. This upright shines in every aspect with its beautiful and delicate sound.
E.Grand	1	A CP-80 Electric Grand, a classic touring grand from the eighties.

E.Piano	1	Electric Piano Mk I Stage Piano SeventyThree. It was built in May 1978 and was adjusted to “deep timbre adjustment”. The volume adjustment is set to ‘Low’. These settings gives the piano a warm sound with a rich fundamental.
E.Piano	2	Electric Piano Mk I Suitcase. Built in January 1975. We fine-tuned the mechanics and adjusted the tines according to the ‘ideal’ timbre adjustment. The volume adjustment was set to ‘close’.
E.Piano	3	Electric Piano Mk II Stage Piano built in April 1981 and adjusted to ‘shallow’ timbre. The volume adjustment is set to ‘close’.
E.Piano	4	Electric Piano Bright Tines Custom Mod. With the invaluable help of one of the planets most acclaimed electric piano technicians, we have prepared one of our magnificent 1975 mk I Suitcase with a special selection of hard hammer tips in certain ranges. It is adjusted with "close miking" and set to ideal timbre in order not to loose the fundamental and the bottom end. The preparation also involved adjustment of the striking line and re-voicing of the harp, in order to get "that" bell sound.
Wurl	1	Wurlitzer 200A electric piano.
Clav/Hps	A-D	A sampled Hohner Clavinet D6.There are 4 Types selectable, with different pick-up variations. (See “Pick-up Type” on page 33.). In addition, all possible filter combinations of the original Clavinet D6 can be recreated in the Clav EQ section. (See “Clav EQ” on page 33).
Clav/Hps	2	A double stringed Italian harpsichord, set to the Long string only registration.
Clav/Hps	3	A double stringed Italian harpsichord, set to the Lute registration.

More information on the included factory pianos and other pianos in the Nord Piano Library can be found on the www.nordkeyboards.com website

(Clav EQ/)Piano Unison Detune

The Unison Detune feature allows you to detune two pianos if they are used simultaneously by activating both Panel A and Panel B. Press this button repeatedly to select one out of three detune depths. The setting will have no effect if only one Panel is active.

(Clav EQ/)Piano Res

If you press the Piano/Res button when a Grand or an Upright is selected, the String Resonance functionality will be activated. This mimics the behavior inside an acoustic piano when strings or parts of strings may resonate at their fundamental or overtone frequencies when other strings are sounded. This feature is only available on the v4 XLR pianos and on the v5 pianos, read more on our web site.

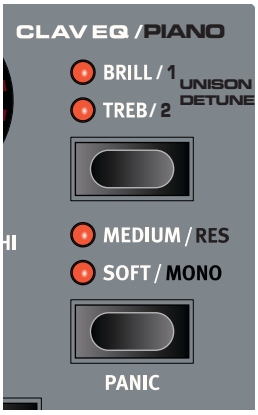
(Clav EQ/)Piano Mono

If you press the A.Piano/Mono button when a Grand or an Upright is selected, the stereo sound will be played back in mono instead. This can be useful if you only have access to one channel on a mixing desk.

About Info

If you hold **Shift** and the **Info** button in the Piano Select section, the display will show the instrument’s name and additional information about the currently selected instrument, e.g. mic placement (Close or Ambient) and a revision number (e.g., “R5”).

Clavinet sound



On an original Clavinet D6 you can select different pick-up and filter combinations by pressing a number of rocker switches. This functionality is very faithfully simulated in the Nord Stage EX, which means that you get all possible original Clavinet D6 sound variations (plus an additional four) by selecting different pick-up and filter combinations! Here's how it works:

Clav EQ

The two **Clav EQ** buttons works as filter selectors. By selecting different combinations of the **Brilliant/Treble** and **Medium/Soft** filter buttons you can reproduce all 15 possible filter variations, exactly like on the original D6.

Pick-up Type

A Clavinet D6 has two separate pick-ups, one on the "neck" and one on the "bridge". By selecting either one pick-up or both in different combinations you can alter the character of the sound quite drastically. When the Clavinet is selected in the Nord Stage EX, you use the **Type** button in the Piano Select section to select pick-up variations according to the table below:

Pick-up Type	Description
A (CA)	Only the "neck" pick-up; a warmer, less bright sound.
B (CB)	Only the "bridge" pick-up; a bright sound.
C (DA)	Both pick-ups on and in phase; a very full sound.
D (DB)	Both pick-ups 180 degrees out of phase; the fundamental is almost cancelled out and the sound becomes thin.

Dynamics (Velocity sensitivity)

Some of the piano instruments sampled for the Nord Stage EX have very wide dynamic ranges by nature and naturally we wanted to capture this as accurately as possible.

Therefore, it could be perceived that it is a little hard to reach the most extreme levels when playing the Nord Stage EX piano sounds with the default keyboard Dynamics setting. This is because the dynamic response curves have been very carefully adjusted to match each original instrument's response characteristics. In other words, Clavia's intention was that when you play a Electric Piano sound, for example, it should almost feel like you are playing a Electric Piano. However, If you want the piano sounds to respond more easily to keyboard velocity, you can set this in the following way.

- Hold **Shift** and press the **Dynamics** button to select one of the four modes. The LEDs to the right of the **Type Display** light up to indicate what mode is selected. Select between 1-3, where 3 is the most compressed response. If all LEDs are off, this indicates the instrument's original sensitivity.

The Dynamics setting is saved with a Program.

The Synth section

Basics

The Synth section in Nord Stage EX was designed to be a versatile yet easy to use “stage” synthesizer to complement the other instrument sections. While being compact and easy to use, it is capable of all kinds of synthesized sounds, from piercing leads and fat basses to swirling pads and shimmering bells. And you have hands-on control over all parameters, which is essential on a stage instrument.

It is based on traditional “subtractive” synthesis with faithful models of analog-style waveforms, but it is also capable of FM (frequency modulation) and Wavetable synthesis. In subtractive synthesis, you start with a bright waveform with lots of overtones, and then shape the colour of the sound with a filter, usually a low-pass filter that removes some of the upper harmonics. By modulating the filter cut-off frequency while the note is playing, dynamic timbres are created.

The Nord Stage Synth also provides other means to generate dynamic and rich sounds, such as pulse width modulation, oscillator sync and dynamic control over FM amount. There are two envelopes (one of them loopable), one LFO for vibrato and a simple EQ for one-the-fly sound shaping. The basic signal path is shown with grey boxes and arrows on the Nord Stage panel.

There is one Synth section for each panel, and they share 16 voices, which are dynamically allocated between the panels. You can play two different sounds simultaneously, layered or in splits. If you, for example, layer the Synth sections of both panels, you can create really complex and evolving sounds.

Osc Group

Oscillator architecture

A lot of effort has been spent on creating a versatile and powerful oscillator section for the Nord Stage Synth. Based on a variable architecture, it provides three different synthesis techniques: Analog, FM (frequency modulation) and Digital wavetables. For each category there is a number of predefined algorithms with the main parameters mapped to the **Timbre** knob.

For example, the Analog category provides one or two oscillators with various waveforms, with or without hard sync. In each case, the **Timbre** knob controls one essential parameter, such as pulse width, relative pitch or sync oscillator frequency. This Timbre parameter can then be modulated by velocity or the Modulation Envelope to create dynamic sounds.

The sonic potential is further enhanced by the fact that the oscillator section actually contains a number of extra oscillators for each voice, which are brought in by the **Unison** knob in he Voices section (see page 46). You can in fact have up to nine oscillators per voice, without losing polyphony. This allows for some really thick sounds!

Timbre

The central **Timbre** control is used to shape the sound in various ways (depending on waveform and algorithm, see below). Timbre can be Morph controlled, allowing wheel, aftertouch or pedal control over the sound. For some algorithms, the **Timbre** knob is disabled.

Timbre control

This knob governs the amount of modulation applied to the Timbre parameter. The Timbre parameter can be modulated by Velocity or the Mod Envelope, indicated by the **Env Mod** LED below the knob.

Velocity

If the **Env Mod** LED is dark, Timbre will be modulated by velocity. If you turn the **Timbre control** knob clockwise, the Timbre parameter will be raised if you play harder.

Mod Env

If you press **Shift** and turn the **Timbre Control** knob so that the **Mod Env** LED lights up, the Timbre parameter will instead be modulated by the Mod Envelope (see page 41).

Wave selector buttons

The two **Wave** selector buttons are used to switch between the different algorithms and categories in the osc group. Hold **Shift** and press the **Wave** buttons up or down to choose a category (Analog/FM/Digital). The LED indicators show which category is activated. Press the **Wave** buttons up or down (without **Shift**) to switch between the different algorithms or waveforms within the selected category.

Waves in the Analog category

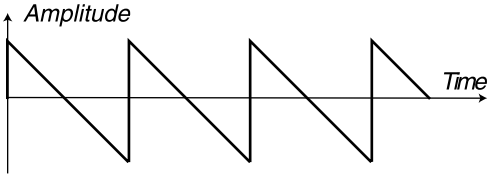
The Analog category has ten waveforms to choose from, summarized in the chart below.

Wave display	Waveform	Explanation
S	Sawtooth	A plain sawtooth oscillator.
Sd	Sawtooth detuned	Two sawtooth oscillators with adjustable relative pitch (Timbre knob) and detune (Unison knob).
S\	Sawtooth synced	A sawtooth oscillator with adjustable pitch offset, hard-synced by a second oscillator.
P	Pulse	One pulse oscillator with variable pulse width.
PF	Pulse fixed time	One pulse oscillator with adjustable pulse width. The pulse width is constant over the keyboard.
P\	Pulse synced	A pulse oscillator with adjustable pitch offset, hard-synced by a second oscillator.
t	Triangle	A plain triangle wave oscillator.
t\	Triangle synced	A triangle oscillator with adjustable pitch offset, hard-synced by a second oscillator.
C\	Cos synced	A cosine oscillator with adjustable pitch offset, hard-synced by a second oscillator.
n	Noise	A white noise generator.

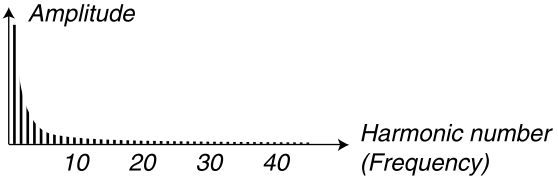
When you change waveform, the name of the currently selected waveform is shown briefly in the **Main Display**.

Sawtooth

The sawtooth wave contains all harmonics and is the richest of the available waveforms. It is suitable for all sorts of sounds.



The sawtooth signal shape.

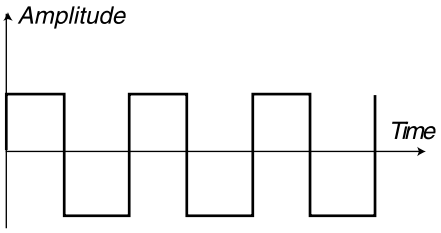


The sawtooth signal frequency spectrum.

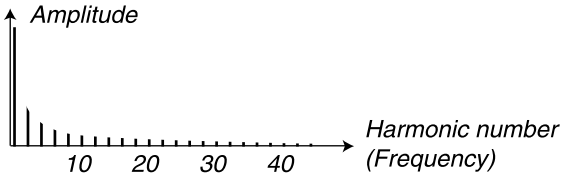
The **Timbre** knob does not have any effect on the sawtooth wave.

Pulse

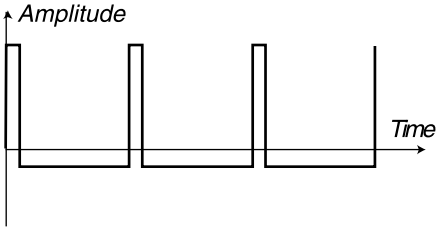
The pulse wave contains only odd numbered harmonics (3, 5, 7 etc.)at 50% pulse width (square wave). This waveform is special in that its harmonic content can be varied continuously, by adjusting the pulse width (PWM).



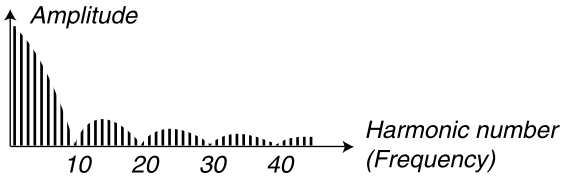
The pure square wave: a pulse wave with 50% pulse width.



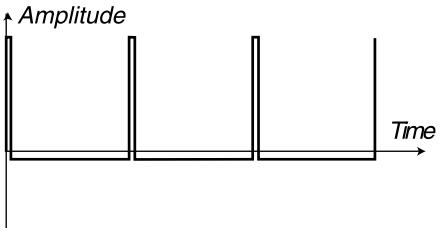
The frequency spectrum of a pure square wave. The signal contains only odd harmonics.



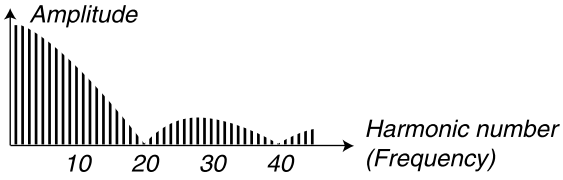
The pulse wave at 10% pulse width.



The frequency spectrum at 10% pulse width. Now, also even harmonics are gradually introduced making the sound "sharper" but also "thinner".



The pulse wave at 5% pulse width.



The narrower the pulse width, the more harmonics are present in the frequency spectrum.

The **Timbre** knob controls the pulse width of the pulse wave, from 50% (square wave) to 99%. You can modulate the Timbre using Morph (see page 60), Velocity or Mod Envelope. This waveform is suitable for many type of sounds and has a more "hollow" character than the Sawtooth wave.

Pulse Fixed time

A normal pulse wave has a pulse width adjusted relative to the wavelength, usually in % (see above). The Pulse Fixed Time algorithm instead generates a pulse wave where the pulse width is adjusted in absolute time values (with the **Timbre** knob), i.e. the pulse width is constant over the keyboard. This results in a spectrum with fixed formants, similar to the character of many acoustic instruments.

The waveform in itself is not different from the normal Pulse algorithm, but it behaves differently over the keyboard range.

Triangle

The triangle waveform has only odd numbered and not very strong harmonics. It is suitable for flute and similar sounds.

Noise

The noise waveform is a chaotic waveform, containing all frequencies at the same time. With the resonant filter and the EQ, you can shape it to produce special effects, e.g. wind noises and whistling sounds.

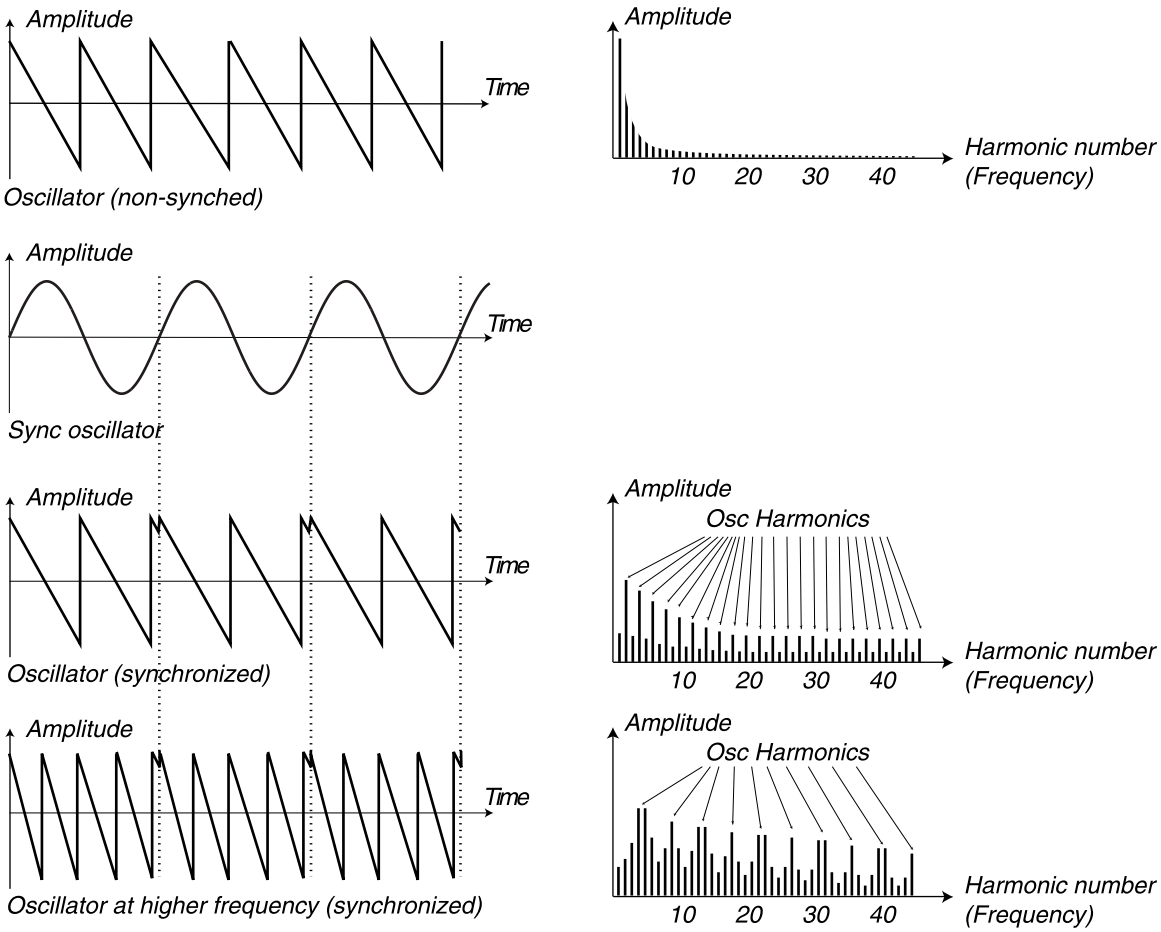
Oscillator Sync waveforms

The Saw, Square, Triangle and Cosine waveforms can be *synchronized*. These modes are marked with a special character in the **Wave Display**. Oscillator Synchronization means that you use the signal from one oscillator to restart another oscillator. Nord Stage EX has a "hidden" sync oscillator for waveforms with this option. Oscillator sync is very useful for generating lead lines with classic "hard sync" sounds. When sync is applied, the basic pitch of the oscillator is locked to that of the sync oscillator. When you vary the relative pitch of the synchronized oscillator with the **Timbre** knob, this will be perceived as a change in timbre, with a frequency spectrum with deep resonance in the oscillator's harmonics.

Tip! When using Oscillator Sync, it can be very useful to have the Timbre amount(s) modulated from any of the Morph assign sources, or by the Modulation Envelope. This will generate a signal with continuously varied harmonic content.

If you choose one of the synchronized oscillator mode, the Oscillator will start over with a new period of the waveform, each time the sync-oscillator does so. If the Oscillator then has a higher frequency than the sync-oscillator, it will get a complex waveform that depends both on its own pitch and on that of the sync-oscillator.

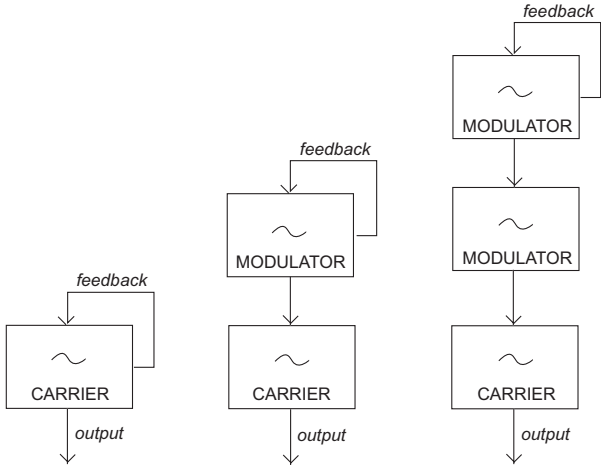
Example 1: a sawtooth wave synced by a sync oscillator. The sawtooth wave is restarted every time the sync oscillator begins a new cycle. The resulting signal gets deep resonance in its harmonics.



In the Nord Stage, oscillator sync is possible with sawtooth, pulse, triangle and cosine waveforms, each providing different spectral character.

FM category

The basic principle behind FM synthesis is to have one oscillator (the modulator) modulating the frequency of another (the carrier). The carrier can in turn modulate the frequency of yet another oscillator, etc. There are several different algorithms in the FM category ranging from one up to three oscillators (operators) modulating each other in series, with or without feedback on the first operator in the chain.



The three different FM algorithms in the Nord Stage: one, two and three oscillator FM with feedback. The feedback is not active in all algorithms.

The Timbre knob controls the FM and feedback amounts. When you turn the knob, all modulations are increased simultaneously. The number of harmonics, and their intensity, increase proportionally to the FM amount. As usual, the Timbre parameter can be modulated by Velocity or the Modulation Envelope, and it can be Morph controlled by any combination of wheel, aftertouch and pedal.

Each algorithm comes with a number of preconfigured frequency ratios. Depending on what kind of sound you want, choose from the different combinations available and you have many interesting FM sounds at your disposal. When a new wave is selected, the **MAIN DISPLAY** shows, for a short duration, the algorithm together with information on the frequency relations between the operators and whether feedback is used. The **WAVE DISPLAY** shows the modulator(s) frequency relation to the carrier. If an operator uses feedback it is indicated by a dot next to the digit. In the chart below all available algorithms together with the notation used in the **WAVE DISPLAY** are listed:

Wave disp.	Algorithm	Freq. relation
Cr	1 op with feedback	1
1	2 op	1:1
2	2 op	2:1
3	2 op	3:1
5	2 op	5:1
9	2 op	9:1
1.	2 op with feedback	1:1
2.	2 op with feedback	2:1
3.	2 op with feedback	3:1
5.	2 op with feedback	5:1
9.	2 op with feedback	9:1
11	3 op	1:1:1
21	3 op	2:1:1
31	3 op	3:1:1
51	3 op	5:1:1
91	3 op	9:1:1

Wave disp.	Algorithm	Freq. relation
22	3 op	2:2:1
42	3 op	4:2:1
82	3 op	8:2:1
1.1	3 op with feedback	1:1:1
1:2	3 op with feedback	1:2:1
1:3	3 op with feedback	1:3:1
1:5	3 op with feedback	1:5:1
1:9	3 op with feedback	1:9:1
1.F	3 op with feedback	1:1:2
2.F	3 op with feedback	2:1:2
3.F	3 op with feedback	3:1:2
5.F	3 op with feedback	5:1:2
9.F	3 op with feedback	9:1:2

Tip! The one-operator algorithm can be used to produce a perfect sine-wave, if the **TIMBRE** knob (feedback) is set to zero.

DIGITAL WAVEFORM CATEGORY

This category features 77 different digital waveforms with various tonal characteristics. The waveforms have been carefully designed and selected to provide rich and interesting timbres with a great variety, for those exquisite sounds that could not be produced with the other algorithms. Advanced wavetable synthesis techniques have been used to reproduce the waveforms perfectly over the whole keyboard range.

Some waveforms have a number of peaks high up in the spectrum, making them suitable for voice-like sounds (e.g. 3, 7, 8, 12), while others are combinations of several overlapping spectra (e.g. 5, 6, 18, 19). Yet others are extremely bright, with a fundamental that is softer than the many harmonics (e.g. 21, 23, 26, 27). Using these waveforms with the different filters and the Synth EQ, you should be able to create a wide variety of timbres. The **TIMBRE** knob does not have any effect in the Digital Wavetable category.

MOD ENVELOPE

The Modulation Envelope is a simple two-stage envelope used to modulate the tone colour over the duration of a note, e.g. create a bright attack by modulating the filter in the start of the note. The Mod Envelope has three modes:

• Attack - Decay (ignoring key release)

• Attack - full sustain - Release

• Repeat mode: Attack - Decay - Attack - Decay - Attack - etc. In this the Mod Envelope acts as an LFO with shapable waveform.

The Mod Envelope can control the Filter Frequency and the Timbre parameters. The amount of modulation is set with the **FREQ CONTROL** and **TIMBRE CONTROL** knobs.

ATTACK

Attack sets the time it should take for the envelope to reach maximum level after you have pressed a key. Turn the **ATTACK** knob clockwise to increase Attack time.

Release/Decay

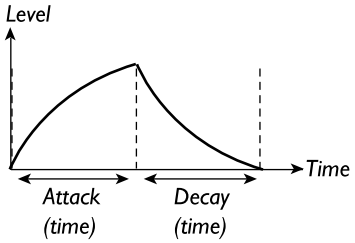
When the attack phase is over, the envelope drops back to zero level. Use the **Rel/Decay** knob to set the time this should take.

Env Vel

If you press **Shift** and turn the **Attack** knob so that the **Env Vel** indicator lights up, the Mod Envelope will be scaled with the keyboard velocity (i.e. how hard or soft you play). This is normally used to make higher velocity (louder notes) produce brighter sounds (because of higher modulation of the filter or the Timbre), which is how most acoustic instruments behave.

Env Mode

Hold down **Shift** and turn the **Rel/Decay** knob to select Envelope Mode. The LEDs below the knob will show the selected mode. The Attack/Decay and Attack/Release modes are illustrated below:



In Attack/Decay mode, the Mod Envelope outputs a control signal that rises to maximum amount at the set Attack time and then immediately falls back to zero at the set Decay time.

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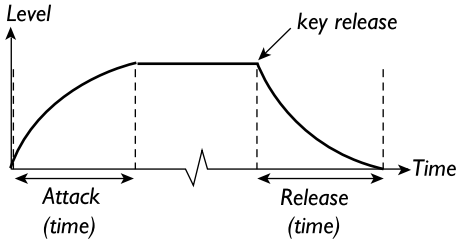
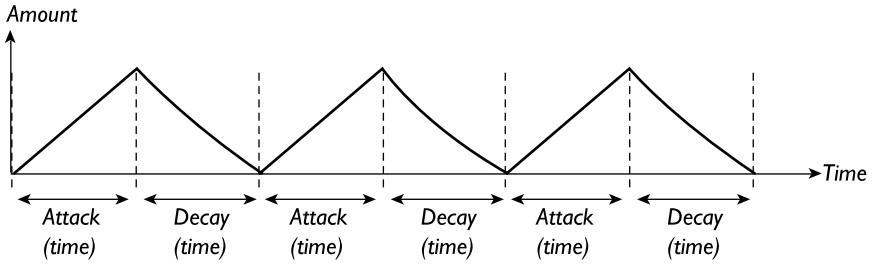


In Attack/Release mode, the control signal from the Mod Envelope stays at the maximum value until key release.

Repeat

In Repeat mode, the Modulation Envelope restart directly after the Decay phase, creating cyclic modulation, like an LFO with shapable waveform, where you can change the waveshape and cycle time by adjusting the Attack and Decay times.



A slow looping Mod Envelope can be used for example to produce continuously sweeping pads, while shorter Attack and Decay settings can produce special effects or repetitive sounds.

Amp Envelope

The final stage of a synth signal chain usually consists of an amplifier to control the signal volume. By modulating the amplifier with an envelope, the sound is given its basic "shape" over time. In fact, the "volume shape" is one of the most important factors to how we identify the sound. By setting up a proper volume envelope you can make a sound "soft", "hard", "plucked" "static" etc.

The Amp Envelope has three modes:

• Attack - Decay (ignoring the key release)

• Attack - full sustain - Release

• Attack - Decay - fixed short release

Each mode has two time parameters, Attack and Release/Decay.

Attack

The **Attack** knob is used to adjust how long it should take for the sound to reach from zero to full amplitude after a key has been pressed. With long Attack settings the sound will gradually "fade in".

Release/Decay

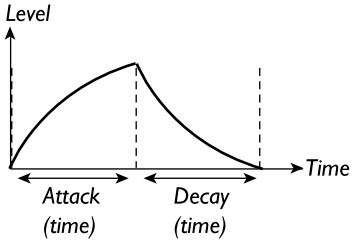
When the attack phase is over, the envelope drops back to zero level. Use the **Rel/Decay** knob to set the time this should take.

Env Vel

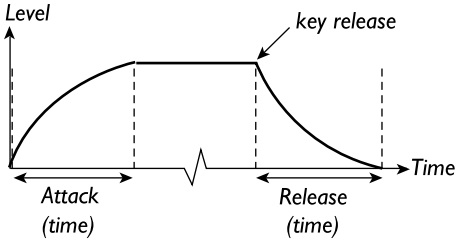
If you hold **Shift** and turn the **Attack** knob so that the **Env Vel** indicator lights up, the volume of the notes will be velocity controlled.

Env Mode

Hold down **Shift** and turn the **Rel/Decay** knob to select Envelope Mode. The LEDs below the knob will show the selected mode. The Attack/Decay and Attack/Release modes are illustrated below:



In Attack/Decay mode, the Amp Envelope rises to maximum amplitude at the set Attack time and then immediately falls back to zero at the set Decay time.



In Attack/Release mode, the Amp Envelope stays at maximum amplitude until the key is released, and then fades to zero.

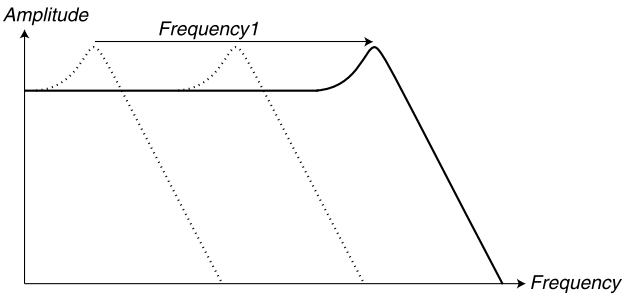
The third Envelope mode, indicated by both LEDs, is similar to the first mode, except that the envelope quickly goes to zero when the key is release.

Filter Section

The filter is, together with the oscillators, the most important sound-shaping tool in a synthesizer. The filter section in Nord Stage EX comprises a lowpass filter with either a 12dB or 24 dB slope, with selectable keyboard tracking. The filter has adjustable resonance, and is self-oscillating at high resonance settings. The filter cut-off frequency can be modulated by velocity or by the Mod Envelope.

Filter Frequency Cutoff

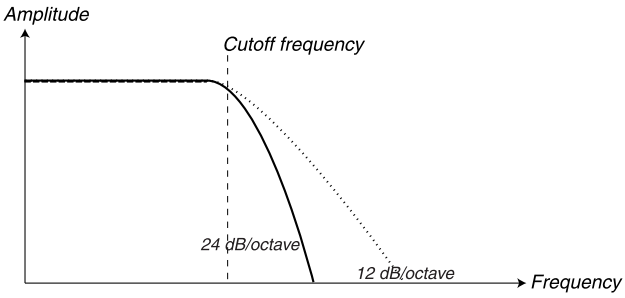
With the **Freq** knob you set the cutoff frequency. Simply put, if you turn the **Freq** knob clockwise, the high-frequency content in the signal will increase. This parameter can be Morph controlled.



When you "open" a low-pass filter, the high-frequency content increases in the output signal.

LP Filter

In the Nord Stage EX you can select between 12 dB/octave and 24 dB/octave (4-pole) slopes for the low pass filter. Press **Shift** and the **4 Pole** button to switch type. The **4 Pole** LED shows which filter mode is selected.



The figure shows the filter with 24 dB and 12 dB slopes.

24 dB (4-Pole)

This is the classic "synth filter" slope used in the Minimoog and Prophet-5 among others. It cuts out frequencies rather drastically, 24 dB per octave. A 24 dB filter is also known as a 4-pole filter.

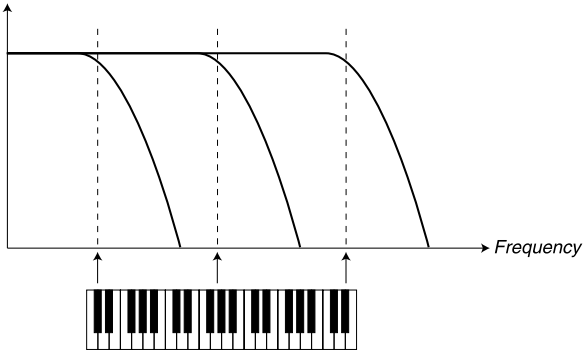
12 dB

The 12 dB/octave slope leaves more harmonics than the 24dB variation discussed above. This type of filter has been used in various early Oberheim synthesizers and others. A 12 dB filter is also known as a 2-pole filter.

KB Track

The reason for having the Keyboard Track switch is related to basic acoustics. If you raise the pitch of a waveform, the harmonics naturally raise in frequency. If the cutoff frequency is constant, the sound will be perceived as getting "muddier" the higher up the keyboard you play. To avoid this effect, use KB Track.

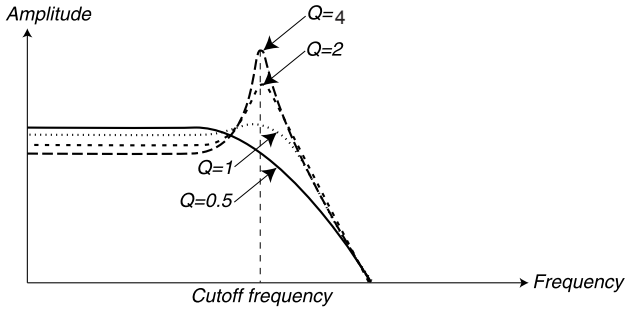
KB Track (keyboard tracking) has three modes; "FULL", "2/3" and "1/3", which is set with the **KB TRACK** button. With KB T turned off (both LEDs off), the filter frequency setting is constant regardless of where on the keyboard you play. When Keyboard Track is activated, the filter frequency setting will be higher for higher notes as indicated in the illustration below. At "Full" tracking (both LEDs on) the filter frequency tracks the keyboard 100% (if you turn up the Resonance parameter to full so that the filter self-oscillates and produces a pitch, Filter Frequency will track to 12 notes/octave). If "2/3" or "1/3" is selected, the filter frequency/keyboard relationship is more subtle, i.e. the filter frequency will increase less with higher notes (66% and 33% respectively).



The figure shows how the Frequency1 value changes according to where on the keyboard you play when **KB TRACK** *is activated.*

Resonance

The Resonance parameter is used to further adjust the characteristics of the Filter. Increasing the Resonance will emphasize frequencies around the set Filter Frequency (cutoff frequency), making the sound thinner. Further raising the Resonance will make the sound resonant to a point where the filter starts to self-oscillate and produce a ringing pitch. Exactly where in the frequency spectrum this "ringing" occurs, depends on the Frequency value.



The figure shows a 24 dB lowpass filter with different resonance amounts (Q-values).

Frequency Control

This knob governs the amount of modulation applied to the Filter Frequency. The Filter Frequency can be controlled by Velocity or the Mod Envelope. The **Freq Control** knob controls the modulation Amount for both modes.

Velocity

If you turn the **Freq Control** knob clockwise, the filter frequency cutoff will be raised if you play harder.

Mod Env

If you press **Shift** and turn the **Freq Control** knob so that the **Mod Env** LED lights up, the filter frequency will instead be modulated by the Mod Envelope (see "Mod Envelope" on page 41).

Voices section

In this section, you set various voice modes for the synth. You choose between monophonic and polyphonic playing, and control glide between notes. Here you also find the powerful Unison mode.

Mono mode

In Mono mode you can only play one note at a time, just like on a traditional monophonic synthesizer. If you play one key and then a second key without releasing the first key, the last note will sound. If you now release the last key, the first one will retrig and start sounding again.

To activate Mono mode, press the **Selector** button so that the **Mono LED** lights up.

Legato mode

To activate Legato mode, press the **Selector** button so that the **Legato LED** lights up.

In Legato mode you can only play one note at a time, just like on a traditional monophonic synthesizer. If you play a new key before releasing the previously played key (legato), the new note will replace the previous one at the current Envelope phase of the previously pressed key. I.e. the new note will not retrigger the Envelopes (Amp and Mod).

If you release the last played key before playing a new key (non-legato), the new note will sound exactly like in Mono mode, i.e. the complete Envelopes will be retriggered.

Glide (portamento)

When activated, the Glide function makes the pitch "glide" from one note to the next when playing (this is sometimes called portamento). It operates in legato/mono mode only. The glide characteristics can be described as "constant rate", which means that the greater the "distance" between two subsequent notes, the longer the glide time. Turn the **Glide** knob clockwise to increase the glide rate.

Auto

Press **Shift** and turn the **Glide** knob to select Auto Glide mode (the **Auto** LED is lit). This means that glide is active only when you play legato (you press a new key before you release the previous key).

Unison

The oscillator section has a number of "hidden" oscillators. The number of extra oscillators varies with the algorithms, but is usually between three and eight. When you activate Unison, these slightly detuned voices are gradually added to the basic sound for those classic synth chorus effects. Note that Unison doesn't reduce the polyphony!

You adjust the number of extra oscillators and the detune amount among the voices with the **Unison** knob:

- The left half of the **Unison** knob range controls a classical two-voice detune effect.
- As a special case, in the "Sawtooth detuned" oscillator mode, the left half of the **Unison** knob range controls the detuning between the two main oscillators.
- The right half of the **Unison** knob range introduces a thicker multi-voice detune, which can be very powerful.

Vibrato

Vibrato modulates the pitch of the oscillators to produce natural vibrato effects.

There are three basic methods you can use to control Synth Vibrato which is set using the **Selector** button in the Vibrato section:

- If Aftertouch (A.Touch) is selected you can control the vibrato by pressing down held notes on the keyboard. See "About Aftertouch" on page 62.
- You can also control vibrato using the Mod Wheel.
- There are also three delay (Dly 1-3) modes which automatically activates vibrato after a certain time for held notes. The difference between the three delay modes is the time it takes for vibrato to activate; Dly1 is the fastest time and Dly3 the slowest. The basic Delayed Vibrato depth and speed settings are set globally on the Sound Page - see "Sound Menu" on page 68.

EQ

The Synth also features a basic 2 band EQ section. This allows you to quickly boost or cut treble and bass frequencies by +/- 15 dB. Turn the **Treble** or **Bass** knob clockwise (from center position) to boost the respective frequency band and vice versa. A LED indicates when the EQ is active.

Sound Select section

When you save a Program the current Synth settings are of course stored together with all other panel settings, but the Sound Select section allows you to select/store Synth sounds separately from Programs. in this way, you can build up a library of favourite synth sounds to access whenever you need them.

Selecting Synth sounds

The available memory slots are divided into three categories; Synth, Pad and Bass, with 99 memory slots in each category, a total of 297 sounds. Having categories helps you quickly find the type of sound you are looking for.

Use the two **Sound Select Up/Down** buttons to step through all the available sounds. To jump between categories, press **Shift** and the **Category** buttons. When you select a sound, the name is shown briefly in the **Main Display**. The smaller LED Display in the Sound Select section always shows the patch number.If a Synth sound has been edited, a dot is shown after the number to reflect this in the **Sound Select Display**.

Storing Synth Patches

To store a Synth Patch, press **Shift** and the **Store Synth** button in the Voices section. The display in the Sound Select section starts blinking. You can now use the **Sound Select Up/Down** buttons to navigate to a memory location where you would like to store your Patch. To switch category, press **Shift** and the **Category** buttons.

To name a Synth Patch you can use the **Page -/+** buttons to move the cursor and the **Value Dial** to select character just as for Programs, see page 13.

To store, press the **Store Synth** button again.

Sound Init

To start with a "clean slate" when programming sounds you can use the Sound Init function. This will initialize the Patch to basic default settings. This is done by pressing **Shift** and **Sound Init**.

7. The Effects

About the effects

The effects available in Nord Stage EX can be divided into three main categories:

- **Panel Effects** - these can affect one instrument (per Panel) at a time. Panel effects are the effects in the main Effects section and in the AmpSim/EQ section. All Panel effects have separate engines and settings for Panel A and B, thus you have two sets of Panel effects available for each Program. See below for a description of the Panel effects.
- **Global Effects** - these affect all instruments routed to the main outputs CH1 & CH2. The Compressor and Reverb on the far right of the front panel are global effects. See page 54.
- The **Rotor Effect** works slightly differently compared to Panel effects. See "The Rotor section" on page 55.

About mono/stereo and effect routing

Some of the effects are mono in/out, some are stereo in/out and others are mono in/stereo out. For each individual effect the channel configuration is stated in the related text. The internal routing of some effects, means that the instrument level has to be taken into account. Whenever this applies it will also be explained in the corresponding effect description.

The Panel effects

Activating Panel effects

To enable a panel effect, press the **ON/OFF** button at the bottom of the corresponding effect section. The LEDs above the button will indicate which instrument the effect is assigned to. Hold down **Shift** and press the **Source** button to change the instrument assignment.

You can also step through the instrument assignments by double-clicking the **Source** button. This is convenient when you only have one hand free and cannot reach the **Shift** button.

Making settings for Panel effects (Effects section)

To make settings for individual effects in the main "Effects" section (Effect 1/Effect 2/Delay), you mainly use the **Rate/Tempo** and **Amount** knobs. Which parameters these two knobs control depend on the selected effect - these are described for the corresponding effects below. The **Rate/Tempo** and **Amount** knobs can also be Morph controlled - see page 60.

About the Focus button

If you have more than one effect activated in the Effects section (e.g. Effect 1 and Effect 2), The **Focus** button is used to select which effect's settings (Rate/Tempo and Amount) you currently "see" and can edit. Pressing the Focus button will alternate focus between the currently activated effects. The LED beside the corresponding Effect 1/Effect 2/Delay section is lit for the edit active effect.

Effect type selection when an Effect is off

When an effect is off, you can still check which effect type is selected by pressing the corresponding Selector button once. The Selector LED will briefly show the current effect type. If you press the Selector button repeatedly, you change the Effect type without turning on the effect. In this way, you can make sure that the right effect type is selected before it is turned on.

This feature is available for the Effect 1 & 2 type, Amp simulation model and Reverb type selectors.

You can also adjust the effect settings even if the actual effect is turned off. The values of the parameters will be shown in the display.

Effect 1

The Effect 1 section offers six different types of modulation. Use the **Selector** button to switch between the available modulation effects. The following effects are available:

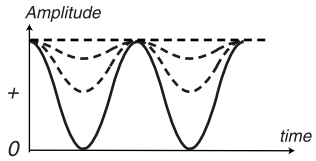
RM (Ring modulation)

Ring Modulation is a type of modulation where two signals are multiplied with each other. The result is an inharmonic "bell like" sound. Herbie Hancock used this effect a lot in the '70s. In the Nord Stage EX the instrument signal is multiplied with an additional sinewave.

When RM is selected you set the sinewave pitch with the **Rate/Tempo** knob and the amount of ring modulation with the **Amount** knob. This effect is mono in/out.

Trem (Tremolo)

Tremolo is basically volume modulation that continuously varies the output signal volume. Tremolo is a commonly used modulation, especially for Wurlitzer electric pianos.
The Tremelo effect is stereo in/out.

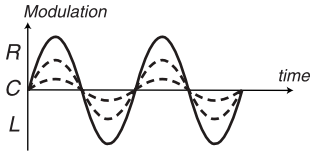


The filled curve indicates maximum **Amount** *value and the dashed curves indicate lower* **Amount** *values. At zero* **Amount** *value the output level is constantly at maximum level*

Use the **Rate/Tempo** and **Amount** knobs to control the Tremolo rate and depth. Note that the output volume is at maximum level at zero **Amount** setting.

A-Pan (Auto Pan)

The A-Pan is an auto panning modulation that smoothly pans the signal between the Left and Right outputs.



The filled curve indicates maximum **Amount** *value and the dashed curves indicate lower* **Amount** *values. The signal smoothly pans between the* ***L****eft and* ***R****ight outputs as indicat-*

You control the rate and amount of panning with the **Rate/Tempo** and **Amount** knobs. The Pan effect is stereo in/out.

Static Pan control of an Instrument

Sometimes you may want absolute manual control of over the panning of an instrument. This can be done with the A-Pan effect as follows:

- Enable Effect 1 for the instrument you want to pan, and select the A-Pan effect type.
- Set the **Rate/Tempo knob** to zero. Then you can place the instrument anywhere in the stereo field manually with the **Amount** knob, just like a pan control on a mixer.

Wah-Wah

The Wah-Wah modulation is often used for electric guitars to get that characteristic "talking guitar" sound. Wah-Wah can also be extremely useful on electric piano sounds. Try out the Clavinet sound

with Wah-Wah modulation and you'll understand. Basically, the Wah-Wah modulation is a lowpass type of filter that can be swept across the frequency range. During the sweep, the filter's characteristics also changes. The Wah effect is mono in/out.

For the Wah-Wah1 modulation you control the "pedal position" with the **RATE/TEMPO** knob and the wet/dry mix with the **AMOUNT** knob.

If you use an expression pedal connected to the CONTROL PEDAL INPUT you can control the filter sweep and thus the Wah-Wah effect from the pedal by using the Morph function - see page 60.

A-WHA 1&2 (AUTO-WAH)

Auto-Wah 1-2 are variations of the Wah-Wah effect described above. For **A-Wha** you control the filter sweep range from the signal's amplitude envelope (envelope follower). For the Auto-Wah 1 modulation you control the range with the **RATE/TEMPO** knob and the wet/dry mix with the **AMOUNT** knob.

A-Wha 2 works in the same way, but produces a different character.

EFFECT 2

The Effect 2 section offers six types of vintage style effects to add that extra flavour to your sounds.

FLANGER 1&2

The flanger produces a very characteristic comb filter effect. You set the flanging rate with the **RATE/TEMPO** knob and the amount with the **AMOUNT** knob. The Flanger effect is mono in/out.

PHASER 1&2

The phaser effect produces a very characteristic "sweep" effect commonly used with electric piano sounds. You control the rate of the phase shift with the **RATE/TEMPO** knob and the phase shift amount with the **AMOUNT** knob. This effect is mono in/out.

CHORUS 1&2

The Chorus effect simulates having several slightly detuned signals. You set the rate for the chorus effect with the **RATE/TEMPO** knob and the amount with the **AMOUNT** knob. This effect is stereo in/out.

DELAY

The Delay effect produces echo/repeat effects. You set the Delay time with the **RATE/TEMPO** knob (745-0.1ms). While you turn the knob, the delay time and corresponding tempo and rhythmic subdivision will be shown briefly in the **DISPLAY**. The **AMOUNT** knob adjusts the balance between the dry signal and the delay repeats.

If you adjust the Rate/Tempo knob, the delay may or may not change the pitch of the current repeats. This is a user selectable option, and is set in the Sound menu - see page 68.

The **FEEDBACK** knob controls the number of delay repeats. Delay is stereo in/out.

Ping Pong

If you press **Shift** and turn the **Feedback** knob so that the **Ping Pong** indicator lights up, the delay repeats will alternate between the left and right channels. When short delay times are used, the repeats will be "asymmetrical" and produce delays that are more like early reflections in reverb units.

Tap Tempo

You can also use Tap Tempo to set a delay time matching the tempo of a song. Simply tap the **Tap Tempo** button in the tempo you wish the delay to sync to a number of times, and the delay time will adjust automatically. As long as the Tap Tempo LED is lit the tempo is calculated - wait until it goes dark to tap in another tempo. Tapping will never result in a pitch change of current repeats.

While you tap the tempo, the calculated tempo and corresponding delay time in milliseconds will be shown briefly on the **Display**.

Ampsim/EQ

This effect section combines an three-band equalizer with a sophisticated amplifier and speaker cabinet simulation. No real amplifier or speaker is perfect, or behaves the same. They all differ in their frequency response, and respond differently to e.g. transients, high gain and load. This characteristic response and sound character of various amplifiers and speaker cabinets is often a desired effect that gives an organic quality to a too clean and perfect sound.

The special behaviour of an amplifier/speaker combination when pushed to its limit, "overdrive", has been exploited by musicians for decades. The Ampsim models faithfully reproduces the overdrive response of different amplifier/cabinet combinations, lending you sound that authentic feel.

When no Amp Model is selected, the Ampsim/EQ section provides a more neutral EQ and overdrive.

The Ampsim/EQ effect is mono in/out.

Drive

The **Drive** knob controls the amount of overdrive for the Ampsim section. If the **Drive** LED is on, it indicates that overdrive is active.

EQ section

This is a 3-band equalizer which features controls for bass, midrange and treble.

When there is no amp modelling, the EQ operates like a standard mixer EQ, with +/- 15 dB boost/cut for each band.

When amp modelling is used, boosting and/or cutting will produce different tonal characteristics, depending the selected amp model.

Amp model

You select a type of amplifier/speaker simulation using the **Selector** button in the Amp Model section. There are three types available, with different characteristics:

Amp Model	Description
Amp 3	A simulation of a Roland Jazz Chorus speaker cabinet, powered by a tube amp.
Amp 2	A simulation of the Wurlitzer 200A internal speaker, powered by a tube amp.
Amp 1	A simulation of a Fender Twin tube amplifier and speaker cabinet.

If all LEDs are off, the effect combines EQ with overdrive (no amp/speaker modelling).

Global effects

If activated, the Compressor and Reverb effects will process all signals routed to the CH 1/CH 2 outputs, but do not affect any signals routed to the CH 3/CH 4 outputs. Both these effects are stereo in/out.

Compressor

The Compressor will even out the dynamics of what you play, making low level sounds louder and high level sounds lower. This produces a tight, punchy sound and makes the overall level easier to control in a live mix situation. You activate the Compressor using the **On** button. The **Amount** knob controls the amount of compression applied.

Reverb

The Reverb section simulates the natural sound reflections in various acoustic environments. You can choose between five reverb types, indicated by the three LEDs lit one or two at a time:

Reverb name	Description
Hall soft	A reverb with the response and character of a spacious hall, with long decay and a mellow character.
Hall 2	A hall reverb with a slightly brighter character
Stage soft	A reverb with a medium decay time and mellow character.
Stage 2	A medium decay reverb, with slightly brighter character.
Room	Room ambiance with a rather short decay time.

The **Dry/Wet** knob sets the balance between the unprocessed and the processed signal.

The Rotor section

The Rotor effect (rotary speaker simulation) in Nord Stage EX accurately reproduces the sound of the rotating horn and bass rotor, as well as the characteristics of the built-in amplifier of the original Leslie units. The Rotor effect is mono in/Stereo out.

- You activate or deactivate the Rotor effect for a selected instrument in the same way as Panel Effects (see "Activating Panel effects" on page 50).
- You switch between fast and slow rotor speeds by pressing the **Speed** button.
- To stop the rotors, press the **Stop** button (this does **not** deactivate the Rotary Speaker simulation - it only stops the rotors). When you press the **Stop** button again the rotors will accelerate to the Slow Speed setting.
- The Rotor acceleration rate, i.e. the time it takes to go from slow to fast and vice versa, can be adjusted on the Sound menu, see "Sound Menu" on page 68.

The **Drive** knob controls the amount of overdrive. This simulates the pre-amp overdrive effect of the original Leslies.

By plugging in a sustain pedal or a foot switch to the **Rotor Speed Pedal** input you can control the Rotor speed, see "Using a Rotor Speed pedal" on page 11. The Rotor Speed can also be Morph controlled - see page 60.

About the Rotor effect's internal routing

The Rotor effect is internally placed after the panel effects in Nord Stage EX. It also "sums" signals if both Panel A and B are active. This means that if you are using a split organ setup for example, both "manuals" will be affected by the Rotor (just like on the real thing).

Note also that the Rotor Drive parameter is dependent on the processed instrument's Level setting. If the instrument being processed by the Rotor uses a very low level setting, the amount of available drive will be significantly reduced. Again, this is very much like it works with the "real articles" - when you increase the organ level, e.g. by using a swell pedal, the amount of distortion from the Rotor effect increases.

8. Keyboard Zones and Dual Panel setups

Keyboard Zones

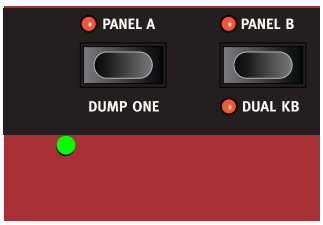
You can split the Nord Stage EX keyboard in up to three Keyboard Zones; Lower (LO), Upper (UP) and High (HI). You can then assign any of the Instrument sections to any (or all) of these zones. An instrument can also be assigned to no keyboard zone at all, which is useful when you want to play it from an external keyboard or from a sequencer.

Creating a split

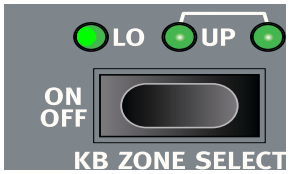
Creating a split so that different instruments are assigned to different keyboard zones is very easy to set up. Proceed as follows:

1. Activate two instrument sections, e.g. an organ sound and a piano sound, by pressing the **KB Zone Select** buttons in each corresponding section so that the **KB Zone** LEDs (Lo/Up/Hi) light up. If you now play the keyboard you should hear both instruments layered.

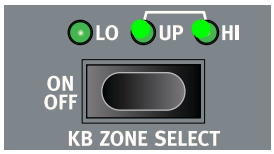
2. Press the **KB Zones 2** button. This splits the keyboard into two Zones, an upper and a lower. The split point is indicated by a green LED above the corresponding key on the keyboard.



3. To assign the Organ instrument section to play on the lower Keyboard Zone only, hold down **SHIFT** and then press the **KB ZONE SELECT** button for the Organ section until only the **LO KB ZONE** indicator is lit.



4. To assign the Piano instrument to play on the upper half of the keyboard hold down **SHIFT** and press the **KB ZONE SELECT** button for the Piano section until both the **UP/HI KB ZONE** indicators are lit.



Now the lower half of the keyboard will play the organ sound, and the upper half will play the piano!

You can also step through the different Keyboard Zone assignments by double-clicking the **KB ZONE SELECT** button. This is convenient when you have only one hand free and cannot reach the **SHIFT** button.

To activate all three Keyboard Zones, press the **KB ZONES 3** button. Now the keyboard is split into three Zones. Now if you press the **SHIFT + KB ZONE SELECT** button (or double-click the **KB ZONE SELECT** button) for an Instrument section, you can step through the following options:

- **LO/UP/HI** indicators lit - the corresponding instrument will play across all Zones 1-3.
- **LO** indicator lit - the corresponding instrument will play across Zone 1 only.
- **LO/UP** indicators lit - the corresponding instrument will play across Zones 1-2.
- **UP** indicator lit - the corresponding instrument will play across Zone 2 only.
- **UP/HI** indicators lit - the corresponding instrument will play across Zones 2-3.
- **HI** indicator lit - the corresponding instrument will play across Zone 3 only.
- No indicator lit - the instrument will not play at all from the internal keyboard, but only from MIDI. This alternative is only available when an instrument has been assigned an individual MIDI channel (see "MIDI menu" on page 68).

SETTING SPLIT POINTS TO CHANGE ZONE RANGES

You can set the split points for Zone 2 and 3 in the following way:

- Press **SHIFT** and **SET LO SPLIT** button repeatedly. As you can see the green split indicator above the keyboard alternates between the available split points. There are split points at C and F in each octave.
- You use the same procedure but with **SET HI SPLIT** button to set the split point for Zone 3.

When using two zones, the split point is set with the **SET LO SPLIT** button.

Keyboard Zone split points are shared between Panel A and B.

LAYERING INSTRUMENTS

When two or three instruments are assigned the same keyboard zones, they're layered, i.e. play at the same time. You can freely select which instrument(s) should play in each Zone, e.g. you could have a piano assigned on its own to the Upper Zone, but have piano layered with organ in the Hi Zone. Another way to layer instruments is to activate both panels simultaneously (see "Dual Panel setups" below).

Octave Shift

Each Instrument section and the Extern section have two **Octave Shift** buttons, which can be used to transpose the notes up or down in octave steps within the total note range of the instrument.

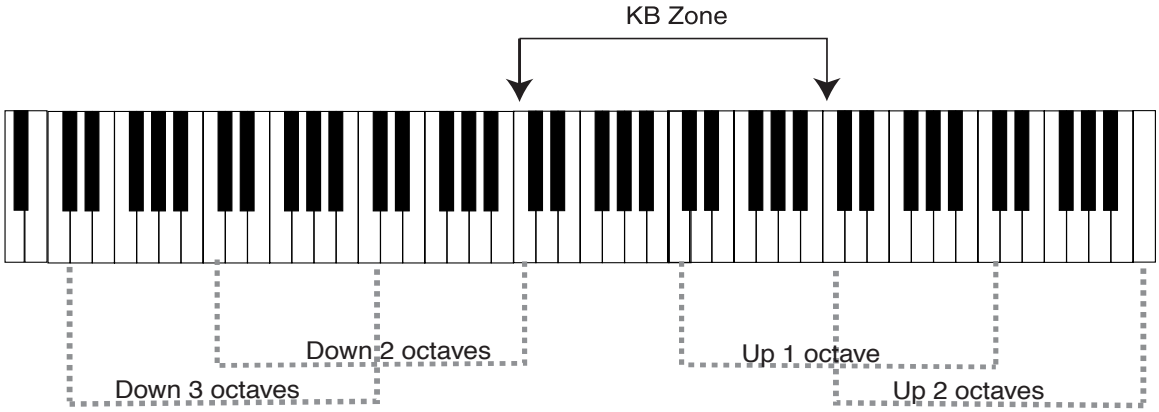
Each instrument in Nord Stage EX has a finite note range:

• The Organ extends one octave below and one octave above an 88 note keyboard range.

• The Piano extends one octave below the 88 key range, but not above.

• The Synth extends one octave in either direction, just like the Organ.

You cannot transpose an instrument so that non-existing notes would end up in the current Keyboard Zone. Thus, when playing over the whole keyboard, you can only transpose a maximum of one octave up or down. But when you are using splits, e.g. so that a piano is set to play in a Zone with a range of 2 octaves, you can use the **Octave Shift** buttons to transpose the piano up or down to select *which* 2 octave range of the available 9 octaves is to play in this Zone. Thus, you can always access the whole note range of any instrument within any set Zone range.



In the illustration above, a piano has been assigned to play in a KB Zone stretching from C4 to C6. Without Octave Shift, the actual note range that will be played will be the same as the set Zone. The dotted lines show which note range will be played in the set Zone when using Octave Shift. In this case you can transpose the piano up or down two octaves so you can play any two octave note range from the selected Zone. No matter what a Zone range is set to you can always reach the entire octave range of any instrument.

Dual Panel setups

If you press both **Panel A** and **Panel B** buttons so that they both light up, this means that both Panels are active. One of the Panels is always “edit active”, i.e. it is the panel settings for either Panel A or Panel B that is currently shown and can be edited. The active Panel is indicated by a blinking **Panel** LED. To show/edit the settings for the other Panel press the corresponding **Panel** button so that it starts blinking.

To disable one of the panels, hold the **Panel** button for the panel you want to keep active, and press briefly the **Panel** button you want to disable.

Press and hold a Panel button and turn the value dial to copy the Panel settings from another Program to the one currently active.

When you have both Panels active you have access to two of each Instrument section, and two Effect sections. Amongst other things, this allows you to play two sounds from each Instrument section simultaneously, e.g. a Clavinet and a Electric Piano or two Synths. For the Organ section things work slightly differently. Instead of two completely separate organ sections, you have one organ engine with two manuals, i.e. different drawbar settings, like on a real B3. See "About Split Organ Setups" on page 29.

Using an external keyboard (Dual KB)

If you like to use an external keyboard to control Panel B, you set it up as follows:

- Select a MIDI channel to transmit over from the external keyboard, and select the same MIDI channel as the "Dual KB" channel on the Nord Stage EX MIDI page menu - see "MIDI menu" on page 68.
- Press **Shift** and the **Dual KB** button so that the **Dual KB** indicator lights up.

Now the internal keyboard will control Panel A and the external keyboard will control Panel B. It is not possible to activate both Panels in this mode.

This function is ideal for live situations when you have a second keyboard in your rig that you mostly use to play internal sounds, but would in certain circumstances like to use to play the Nord Stage EX "double manual". By activating Dual KB you can quickly switch between these modes without having to bother with MIDI menus. Having this function easily accessible on the front panel makes its easy to turn off and prevent the external keyboard to play when its used to play its own sounds.

Another advantage with the Dual KB mode is that you can access the knobs and parameters for either panel from the Nord Stage, while the internal keyboard is always playing Panel A, and the external keyboard controls Panel B. For example, you can keep on playing Panel A with one hand on the internal keyboard while you simultaneously adjust the drawbars for the second keyboard on Panel B.

Please note that the Dual KB setting is saved with a Program, together with all other Panel settings. This makes it easy to access any complicated keyboard setup with the push of a button - ideal for live situations.

Using multiple keyboards

Sometimes you may want to control the Nord Stage from more than two keyboards. For example, you may want to have two external keyboards for Organ A and B, while keeping the internal keyboard for the piano sounds. Thanks to the flexible MIDI configuration of the Nord Stage, this is no problem at all.

The Nord Stage can be set up to receive on a separate MIDI channel for each instrument (see "MIDI menu" on page 68). When such a MIDI channel is assigned, the instrument can be assigned to no Keyboard Zone at all (when no KB Zone indicator is lit). This means that the instrument is active and you can adjust all parameters on the panel as usual, but it can only be played via MIDI, i.e. from your external keyboard (or a sequencer).

9. The Morph Assign feature

About Morph Assign

The three main **Morph Assign** buttons are located in the Program section.

The Morph function can be used to control single or multiple parameters using the **Wheel**, a connected **Control pedal** or **Aftertouch** (see "About Aftertouch" on page 62). This gives you plenty of real-time control possibilities to augment your playing style. It is very simple to set up and use, and all Morph assignments are stored with the Program.

Many of the Factory Programs have Morph assigned parameters. If a Program uses Morph, one or more of the **Morph Assign** indicators will be lit to indicate this.

E.g. if the **Wheel** indicator in the Morph Assign section is lit for a Program you can move the wheel and all Morph assigned parameters will move correspondingly so you "see" exactly what parameters are currently assigned.

Using Morph - an example

In this example we shall describe how to assign Morph to the **Level** rotary encoders for two Instrument sections and use the Wheel to lower the level of one instrument while simultaneously raising it for the other. This allows you to "morph" seamlessly between two sounds by using the Wheel.

1. Set up so that you have two Instrument sections active e.g. the Piano and Organ section, and that these are assigned to the same Zones so that they are layered when you play the keyboard.

2. Set the **Level** knob for one of the two active instrument sections to the maximum value (fully clockwise) and the **Level** knob for the other active instrument section to the minimum value (fully counter-clockwise).

3. Hold down the **Wheel** button in the Morph Assign section and turn the **Level** knob set to maximum value down to minimum value.

As you can see, the encoder LED pointing to the maximum value position (where it initially was set) stays lit and the encoder LED pointing to the minimum value position (where you just set it) is also lit. The two lit encoder LEDs now indicate the Level range (see "About setting Morph parameter ranges" on page 62) controlled by the Morph Assign function, which in this case was the full range of the Level rotary encoder.

4. Release the **Wheel** button in the Morph Assign section and push the Wheel forward. The Level knob is now controlled by the Wheel and the LED's continuously reflect the level changes when moving the Wheel. In this example, when the Wheel is fully forward the Level goes down to zero, and when you move the Wheel back the Level goes back up to maximum.

5. Hold down the **WHEEL** button in the Morph Assign section again while turning the Instrument **LEVEL** knob that was set to minimum value in Step 2 up to maximum value.

6. Release the **WHEEL** button in the Morph Assign section.

7. When you now move the Wheel, the Level is gradually lowered for one instrument and raised for the other instrument, allowing you to "morph" between the two instruments!

If you double-click a Morph button (**WHEEL**, **A.TOUCH** or **CTRLPEDAL**), it will stay active, and you can assign any number of morphs without holding the Morph button. When you have finished assigning Morph parameters, press **EXIT (SHIFT)** to exit. This for example allows for one-handed Morph assignments.

Morph Assignable parameters

Basically you can use the Morph function to control all rotary encoders (knobs that show parameter values with LEDs) and the organ drawbars. Apart from the number of assignable parameters, there is no limit to how many parameters you can control simultaneously using Morph.

The following parameters can be Morph controlled:

- The **LEVEL** knobs for all Instrument sections.
- The **TIMBRE** knob in the Synth section.
- The **FILTER FREQUENCY** knob in the Synth section.
- The **DRAWBARS** in the Organ section.
- The Effect **RATE/TEMPO** knob.
- The Effect **AMOUNT** knob.
- The **PARAMETER** knob in the Extern section (see page 64).
- The **ROTOR SPEED** button. E.g. hold down the **WHEEL** button in the Morph Assign section, and press the **ROTOR SPEED** button once. Now the Wheel controls the Rotor Speed, which is indicated by clearly lit **ROTOR SPEED** LEDs when the corresponding Morph button is held. Note that this enables you to set Rotor Speed continuously, instead of just alternating between two fixed speeds. To deactivate, hold down the **WHEEL** button in the Morph Assign section, and press the **ROTOR SPEED** button again.

About setting Morph parameter ranges

In the previous example we controlled the full range of two Instrument **Level** knobs with Morph. But you can also set relative ranges for parameters. For example, you could assign one parameter to be controlled fully (min/max), and another parameter knob to be controlled from 12 o'clock position to 3 o'clock position. This would mean that the first parameter would vary between the min and max values whereas the second parameter would vary between 12 o'clock position to 3 o'clock within the Morph assigned controller's full range.

When you press and hold down one of the buttons in the Morph Assign section to assign Morphing, the initial position of a parameter determines the **first** value, and the position you move the parameter to determines the **second** value. Using the Wheel as an example, this means that when you move the Wheel fully forward the parameter will move from the first value to end up on the second value.

Clearing Morph Assignments

To clear Morph Assignments, press **Shift** and the corresponding button in the Morph Assign section that stores the assignments that you wish to clear.

To remove an individual parameter, hold down the **Morph assign** button that the parameter is assigned to. The current range will be shown by the rotary encoder LEDs for the parameter. Move the rotary encoder until both LEDs go off to erase the Morph assignment.

About Aftertouch

We have previously used the Wheel as an example controller, but you can also use Aftertouch to Morph control parameters.

The Nord Stage EX keyboard can respond in two ways to how you play. The first is velocity (not applicable for organ sounds or Morph), which means that the faster the player presses a key down, the higher the velocity value. Once a key is played and held down, there is also 'Aftertouch' (sometimes called channel pressure). The player can apply more pressure on a key while it is down; and this will generate a signal that can be used to control parameters. Applying Aftertouch to one key will affect the sound of all sounding notes of the instrument.

10. The Extern section

About the Extern section

When developing Nord Stage EX, Clavia aimed to make external control an integrated feature of the instrument, where all the essential external MIDI control functions would be as accessible and easy to use as the functions and parameters for the built-in instruments. That's what you get in the Extern section.

The Extern in most cases behaves like the internal instruments. For example, it is enabled and assigned a keyboard zone in the same way. It has a multi-purpose Parameter knob, which is used to send MIDI Volume, Program Change and Continuous Controller messages. You select the current Parameter focus with the **Parameter Select** button. Detailed settings for MIDI Channel, Program Change and Continuous Controllers, among other things, are accessed through the Extern Menu (see page 70).

Setting up

1. Connect a MIDI cable from Nord Stage EX's MIDI Out to the MIDI In on the external device.

2. Press **Shift** and the **Extern** button to access the Extern menu.

3. Use The **Page** buttons to access the "Extern MIDI A/B Channel" page.

4. Use the **Value Dial** to select the MIDI channel (1-16) you would like to transmit over. Use the **Panel A** and **B** buttons to access the channel setting for each panel. Press the **Exit (Shift)** button briefly to exit the menu.

5. Set the external instrument to receive on the same MIDI channel.

Using the Extern section

Activating

Before Extern MIDI is sent out from Nord Stage EX, you have to activate the Extern section. This is done by pressing the **On** button under the **Parameter** rotary encoder.

About Keyboard Zones

There are two Extern sections, one for each panel. You can use Keyboard Zones to create splits and layers just like for the internal instruments. If you set the Extern section to only play in the LO Zone, the external instrument will only respond to notes played in this Zone. In other words, it works transparently together with the built-in instruments!

In addition to the usual Keyboard Zones, there is an extra option that doesn't assign the Extern section to the internal keyboard at all. However, all other External features are still active, such as the Pitch Stick and the **PARAMETER** knob. This is useful when you want to control external equipment with no need for MIDI keyboard messages.

See "Keyboard Zones and Dual Panel setups" on page 56 for information on how to set up and use Keyboard Zones.

OCTAVE SHIFT

The **OCTAVE SHIFT** buttons in the extern section also work exactly as for internal instruments. As with them, the shift range depends on the total note range of the external instrument, and the range of the Keyboard Zone(s) that the external instrument is currently assigned to. See "Octave Shift" on page 58.

ACTIVATING PITCH STICK/SUSTAIN PEDAL MESSAGES

By pressing **SHIFT** and one of the **PSTICK** or **SUSTPED** buttons you can set up whether Nord Stage EX should send Pitch bend and/or Sustain pedal messages via the Extern MIDI channel (a lit LED indicates it is activated).

THE PARAMETER SECTION

The Parameter section comprises the three buttons in the Parameter Select section and the **PARAMETER** rotary encoder at the top. Simply put, you select a parameter and vary the value of the selected parameter with the rotary knob. The **PARAMETER** rotary encoder can also be Morph controlled - see page 60.

The following parameters can be set using the Parameter Select buttons:

VOLUME

If this is activated, the **PARAMETER** rotary encoder will send MIDI Volume messages (0-127), allowing you to control the level of the external device. The external instrument may have to be set to receive MIDI CC messages for this to function. You can turn this off on the Extern menu - see "Extern menu" on page 70.

PROG CHANGE

When this is on, the **PARAMETER** rotary encoder will send Program Change messages (0-127). This allows you to select Programs for the external instrument. This works slightly differently than for other parameters. The Parameter rotary encoder will in this mode send a Program Change message for each individual rotary encoder LED. To access all 127 messages simply continue to turn the rotary encoder multiple times - it will continue to send messages across the whole range. The external instrument may have to be set to receive MIDI Program Change messages for this to function.

You can turn this off on the Extern menu - see "Extern menu" on page 70.

(If the external instrument organizes programs in Banks, there is an option to send Bank Change messages on the Extern Menu page, - see "Extern menu" on page 70.)

MIDI CC

This allows you send MIDI Control Change messages to control a parameter of your choice on the external instrument. You first have to decide which Controller number the **PARAMETER** rotary encoder should send value changes for. This is done on the Extern Menu:

1. Press **SHIFT** and the **EXTERN** button to access the Extern menu.

2. Use the **PAGE** buttons to select the "Extern MIDI CC Number" menu page.

3. Use the **VALUE DIAL** to select a MIDI CC Number (0-119). You may want to check the manual for the external instrument to see which parameters are assigned to which CC numbers.

4. Press the **EXIT (SHIFT)** button briefly to exit.

If you now activate the **MIDI CC** button in the Parameter Select section, you can control the selected external parameter using the **PARAMETER** rotary encoder in the Extern section. You can turn this off on the Extern menu - see "Extern menu" on page 70. The external instrument may have to be set to receive MIDI CC messages for this to function.

About Send On Load

You can set whether Program Change, Volume and MIDI CC messages are sent out when you load a Program in Nord Stage EX. If you do not want this to occur, make sure "Send On Load" is set to "Off" on the Extern menu.

11. System functions

The System functions are divided into four menus; System, Sound, MIDI and Extern. Press **Shift** and the corresponding button in the Program section to access the desired menu.

To leave a menu at any time, press the **Exit (Shift)** button briefly.

All changes you make to the system functions are automatically stored in Nord Stage EX, except the Local On/Off setting, which is always set to Local On at power on.

System menu

Press **Shift** + **System** to enter the System menu. Use the **Page -/+** buttons to navigate between the different pages. Push a **Page** button once to step through the menu, or hold the button to scroll quickly. Use the **Value Dial** to change the settings. When you are done, press **Exit (Shift)** briefly to exit the menu.

The following items can be found on the System menu:

Function	Description	Range/Values
Transpose	Transpose allows you transpose the pitch of instruments up or down in semitone steps.	-/+ 6 semitones (in steps of 1 semitone). Default value is “0” (no transpose).
Fine Tune	Fine Tune can be used to adjust the pitch of instruments in finer increments.	+/- 50 Cents (half a semitone). Default value is “0” (no fine tune).
Audio Routing Mode	The output routing of the instruments in the Nord Stage can be determined in two different ways, globally, or independently for each program. When “Global” is selected, the output routings will be the same for all programs, and the global settings will override the routings stored with each program.	Global (Default), Program
Organ Audio Output	This allows you to set which channel output pairs (or mono output) to use for the Organ section. Note that you cannot have different routings for Organ A and B. If the Audio Routing Mode (see above) is “Program”, this setting will be saved with the program.	“1 & 2” (Default), ”3 & 4”, ”3” ,”4”
Piano Audio A/B Output	This allows you to set which channel output pairs (or mono output) to use for the Piano A and B sections. Use the Panel A & B buttons to access the settings for each panel. If the Audio Routing Mode (see above) is set to “Program”, these settings will be saved with the program.	“1 & 2” (Default), ”3 & 4”, ”3” ,”4”

Synth Audio A/B Output	This allows you to set which channel output pairs (or mono output) to use for the Synth A and B section.Use the Panel A & B buttons to access the settings for each panel. If the Audio Routing Mode (see above) is set to “Program”, these settings will be saved with the program.	“1 & 2” (Default), ”3 & 4”, ”3” ,”4”
Organ Keyboard Trig Mode	This allows you to change how the Nord Stage EX keyboard triggers Organ sounds. When “Fast/High” is selected, you will trigger organ sounds before the key is fully depressed. This mode closely mimics the way a real B3 triggers notes.	Fast/High (Default), Normal
Sustain Pedal Polarity	This allows you to change the polarity of a connected sustain pedal, in case the functionality of the pedal is reversed (i.e. when the pedal is up, sustain is on and vice versa).	Open, Closed (Default)
Sustain Pedal Use as Rotor	If you have only one pedal connected and want to use it as both Sustain Pedal and Rotor Speed Pedal, enable this setting. Note that even if this is enabled, and you connect a pedal to the Rotor Speed input, this setting will be overridden and you will be able to use both pedals separately.	No (Default), Yes
Rotor Pedal Polarity	This allows you to change the polarity of a sustain pedal connected to control Rotor Speed, in case the functionality of the pedal is reversed (i.e. when the pedal is up, Rotor Speed is fast and vice versa).	Open, Closed (Default)
Rotor Pedal Mode	If you are using a sustain pedal connected to control Rotor Speed this allows you to set how this should operate. “Hold” means that the Rotor Speed is fast for as long as the pedal is down and reverts back to slow when the pedal is released (or vice versa depending on the set pedal polarity). “Toggle” means that the fast/slow rotor speed is switched with a pedal depression, like an on/off switch pedal.	Hold (Default), Toggle
Ctrl Pedal Type	Different brands of control pedals have different specifications (resistance, offset and linearity). To simplify setup and to optimize the response of the pedal for the Nord Stage, the most common pedal makes are preconfigured, and you simply select the type of pedal you connect. Roland, Yamaha and Fatar are linear control pedals with different scaling and offset. Ernie Ball pedals (“ErnieB”) are marketed as volume pedals, with a logarithmic response, but the response is rescaled internally in the Nord Stage to make them work nicely as control pedals. They may need a Y-cable (stereo plug -> 2 mono plugs) to work with the Nord Stage.	Roland (Default), Yamaha, Ernie B, Fatar
Control Pedal Use as Swell	You can use a control pedal to control organ swell. If you wish to do so set this to “Yes”. Note that even if this is enabled, and you connect a pedal to the Organ Swell input, this setting will be overridden and you will be able to use both pedals separately.	No (Default), Yes

Swell Pedal Type	This setting configure the Swell Pedal. See “Ctrl Pedal Type” above for details.	Roland (Default), Yamaha, Ernie B, Fatar
Swell Pedal Dest	This setting configure the Swell Pedal destination. Set this to Organ if only the Organ section should be controlled or to All if the volume of all sections should be controlled.	Organ (Default), All
Memory Protect	This is set to “On” when Nord Stage EX leaves the factory, meaning that you cannot save any changes to Programs or Synth Sounds. Set this to Off if you wish to store your own Programs. System settings and the two Live buffers are not protected by this setting.	On (default), Off
Factory Reset	This resets all system settings and restores the original Live-buffers. Hold the flashing **STORE** a few seconds to perform the reset. The display will take a few seconds. Stored programs are not affected by this action (except the live buffers).	

Sound Menu

Press **SHIFT** + **SOUND** to access the Sound menu. Use the **PAGE** -/+ buttons to navigate between the various menu items on the Sound menu. Hold a **PAGE** button to scroll quickly. The **VALUE DIAL** is used to change settings. When you are done, press **EXIT (SHIFT)** briefly to exit the menu.

Note! The settings on the Sound menu are not saved with a Program.

The following items can be found on the Sound menu:

Function	Description	Range/Values
Synth Vibrato Rate	This determines the rate of the Synth Vibrato.	4.00 - 8.00 Hz (Default 6.00 Hz)
Synth Dly Vibrato Amount	This determines the amount of Synth Vibrato when any of the vibrato delay modes are used.	0-50 cent (Default value is 25 cent)
Organ Key Click Level B3	This sets the amount of Key Click for B3 organ sounds (see **“Key click control” on page 26**)	1-10 (Default value is 5)
Rotor Acc	The acceleration rate of the Rotor effect, i.e. how long it takes for the Rotor to speed up or slow down.	Slow, Mid (Default), Fast
Delay Mode	This sets if the delay should change the pitch on sounding repeats if the Rate/Tempo knob is adjusted, or not. When set to Normal, the pitch does not change.	Analog (Default), Normal

MIDI menu

Press **SHIFT** + **MIDI** to access the MIDI menu. Use the **PAGE** -/+ buttons to navigate between the various menu items on the MIDI menu. Hold a Page button to scroll quickly. The **VALUE DIAL** is used to change settings, the Panel buttons to switch between A and B where applicable. When you are done, press **EXIT (SHIFT)** briefly to exit the menu.

The following items can be found on the MIDI menu:

Function	Description	Range/Values
MIDI Control Local	Here you set whether the Nord Stage EX keyboard and front panel controls should control internal Programs or only send MIDI. Local On is the normal “play mode”. In Local Off mode, the front panel and keyboard actions are transmitted via MIDI only and do not control the internal sound(s) directly.	On (Default), Off
MIDI Panel A/B Channel	This sets the MIDI channel for Panel A/B	1-16, Off (Default A ch 1) (Default B ch 2)
MIDI Organ A/B Channel	This sets the MIDI channel for the Organ section A/B. If a channel is set here, you can assign the corresponding instrument to no KB Zone at all, i.e., make it active but available only through MIDI.	1-16, Off (Default off)
MIDI Piano A/B Channel	This sets the MIDI channel for the Piano section A/B. If a channel is set here, you can assign the corresponding instrument to no KB Zone at all, i.e., make it active but available only through MIDI.	1-16, Off (Default off)
MIDI Synth A/B Channel	This sets the MIDI channel for the Synth section A/B. If a channel is set here, you can assign the corresponding instrument to no KB Zone at all, i.e., make it active but available only through MIDI.	1-16, Off (Default off)
MIDI Dual KB Channel	This sets the MIDI channel for an external keyboard when using Dual KB mode - see page 59.	1-16, Off (Default 16)
MIDI Prog Change Mode	This allows you to set whether you want Nord Stage EX to transmit and/or receive MIDI Program Change Messages.	Off, Send, Receive, Send & Receive (Default)
MIDI Ctrl Change Mode	This allows you to set whether you want Nord Stage EX to transmit and/or receive MIDI Controller Messages.	Off, Send, Receive, Send & Receive (Default)
Send MIDI Ctrl	You can perform a dump of all MIDI Controllers for the selected Panel. Hit Store to perform the dump. See “Sending MIDI Controller dumps” on page 89.	Panel A, Panel B
Dump Program Source	Here you can perform a MIDI SysEx dump of the currently selected Program or of all 126 Programs of the internal memory (plus the Live buffers 1 & 2). See “Sending Program dumps” on page 88.	One (Default), All
Dump Synth Sound	Here you can perform a separate MIDI SysEx dump of just the Synth memory settings. See “Sending Synth Sound bank dumps” on page 89.	Slot A/B, Synth, Pad, Bass, All (Default)
Instrument SysEx ID	Most instruments have a unique Instrument ID #. If more than one of the same instruments are connected in a MIDI network, this ensures that no instrument will receive SysEx dumps not intended for it.	1-16, All (Default)

Extern menu

Press **Shift** + **Extern** to access the Extern menu, where you can find settings and functions relating to the Extern section - see "The Extern section" on page 63. Use the **Page -/+** buttons to navigate between the various menu items on the menu. The **Value Dial** is used to change settings. When you are done, press **Exit (Shift)** briefly to exit the menu.

Most items on the Extern menu have separate entries for Panel A and B! Most settings from the Extern menu are saved with a Program. The only exceptions are the "Extern MIDI A/B Channel" if Extern MIDI Mode is set to Global, and "Send on Load".

The following items can be found on the Extern menu:

Function	Description	Range/Values
Extern MIDI Mode	The Extern MIDI Channel can be determined in two different ways, globally, or independently for each program. When "Global" is selected, the Extern MIDI A & B channels will be the same for all programs. If Program is selected, the Extern MIDI A & B channel will be saved with each Stage EX program.	Global, Program
Extern MIDI A/B Channel	This sets the MIDI channel the Extern section should use .	1-16 (14 default for Panel A, 15 is default for Panel B)
Extern MIDI A/B Volume	The Extern section can send MIDI Volume messages (0-127), allowing you to control the level of the external device.	Off (Default), 0-127
Extern MIDI A/B Prog Change	The Extern section can transmit MIDI Program Change messages (0-127), allowing you to change programs on external devices.	Off (Default), 1-128
Extern MIDI A/B Bank Sel cc00	This allows you to set a value for a MIDI Bank Select message on Control Change address 00 (cc00).	Off, 0-127
Extern MIDI A/B Bank Sel cc32	This allows you to set a value for a MIDI Bank Select message on Control Change address 32 (cc32). Note that there are many different variations between instruments in how Banks are numbered and accessed via MIDI.	Off (Default), 0-127
Extern MIDI A/B CC Value	This will transmit values for the selected MIDI CC number.	Off (Default), 1-127
Extern MIDI A/B CC Number	This decides which MIDI Controller number the Extern section should be transmitted when MIDI CC is activated.	MIDI CC 0-119 (Default is 2)
Extern MIDI A/B Send Wheel	To avoid transmitting Modulation Wheel messages make sure this option is set to "No".	Yes (Default), No
Extern MIDI A/B Send A.Touch	To avoid transmitting After Touch messages make sure this option is set to "No".	Yes (Default), No
Extern MIDI A/B Send CtrlPed	To avoid transmitting Expression Pedal messages make sure this option is set to "No".	Yes (Default), No
Extern MIDI A/B Vel Curve	Use this setting to adjust the velocity response curves in the Extern section.	Norm (Default), Soft, Hard
Extern MIDI Send on Load	To avoid transmitting Program Change, Volume or MIDI CC messages when you load a Program in Nord Stage EX, make sure "Send On Load" is set to "Off" on the Extern menu.	No (Default), Yes

12. Factory Presets and OS

Internal memory

The Operating System, Programs and Piano samples in Nord Stage EX are stored in a so-called Flash memory. A Flash memory keeps the data also when the power is shut off. Another big advantage is that you can replace data in the Flash memory at any time. This means that you will be able to download OS upgrades and Programs to your Nord Stage EX from a computer or sequencer without needing to replace or add any new hardware. Nord Stage EX also features a USB port for quick and easy download of new Piano instrument samples. The total capacity of the Flash memory is 256 MB in the Stage EX.

The internal sound memory of Nord Stage consists of 21 Banks holding 6 Programs each for a total of 126 Programs. In addition there are the two Live buffer memories, which will continuously store any changes as they are made, and remember these settings after the power is shut off.

Factory presets

All factory Programs of Nord Stage EX can be replaced. To make sure you don't accidentally overwrite Programs you want to keep, it's a good idea to back up your sounds regularly on a computer or on a hardware sequencer that can record and play back MIDI SysEx. data. For information on how to back up Programs please refer to "Sending Program dumps" on page 88. This functionality as also available with the Nord Sound Manager.

Restoring the factory presets

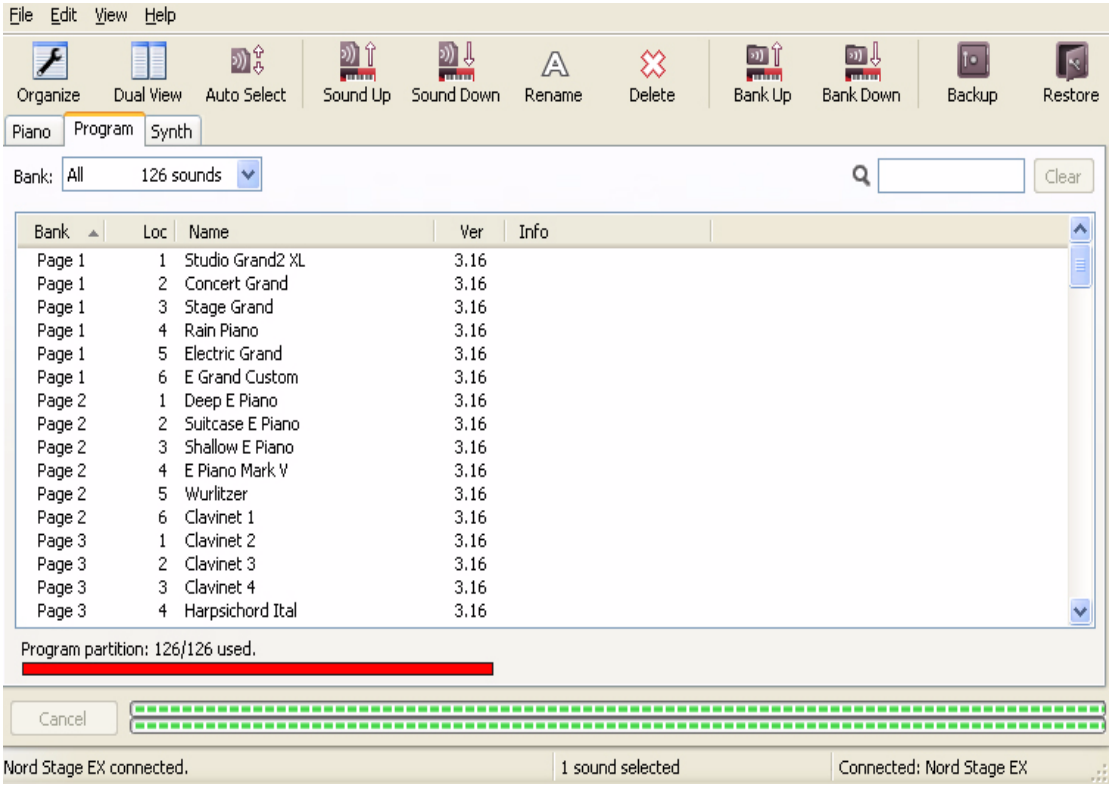
The factory Programs will be available as a MIDI SysEx file for download at the Nord web site at http://www.nordkeyboards.com. Please refer to "Receive MIDI SysEx Dumps" on page 89 for information on how to restore the factory presets using MIDI.

If you like to reset everything including the pianos, use the Restore functionality in the Nord Sound Manager together with a Stage EX backup file, that is available on the DVD or as on the www.nordkeyboards.com web site.

OS upgrades

The latest OS version for Nord Stage EX is available for download at:
http://www.nordkeyboards.com.

13. Nord Sound Manager



The Nord Sound Manager is the application that allows you to organize the various memory areas, the partitions in the Nord Stage EX. It is also used to download pianos, programs or synth patches to the Nord Stage EX or to upload any of these items - called sounds - from the Nord Stage EX memory to the computer hard drive. The Nord Sound Manager provides access to various methods to download the sounds to the unit and a function to backup and restore the entire Nord Stage EX memory.

System requirements

The Nord Sound Manager is compatible with computers running Mac OSX 10.4 or later, Windows XP and Windows Vista. If you run the Nord Sound Manager on a Windows computer, you also need a Clavia USB Driver of version 2.14 or later installed. The Nord Stage and Stage EX OS has to be v5.0 or later.

- Nord Stage EX OS Updates, USB drivers and instructions on how to install these are available at the www.nordkeyboards.com website and on the DVD that accompanies this unit.

Overview

You can work with the contents of the piano partition, the program partition and the synth patch partition. These are all accessed from the tabs, conveniently labelled Piano, Programs and Synth. Below the tabs is a drop down menu, with which you select one of the banks in the partition.

- If no Nord Stage EX is connected properly to the computer, pages and memory locations will be greyed out.

Important: The actions that take place in the Nord Sound Manager will affect the memories in the Nord Stage EX. The Manager is on-line with a connected Stage at all times; any changes that you perform in the Manager will immediately be executed in the Nord Stage. If you e.g. delete a piano or a program from the list in the Nord Sound Manager, that same piano or program will also be deleted from the Nord Stage EX Flash memory.

The Toolbar

The Toolbar gives you direct access to some of the more frequently used functions in the Nord Sound Manager. Clicking on an icon will activate one of these functions, and a dialogue will often appear asking for confirmation or further instructions from you.

The tabs

Select the partition that you wish to work in with the Tabs. The Piano tab allows you to change the content of the Nord Stage piano partition, the Programs tab is the program partition and the Synth tab allows you to organize the synth patches. Each of these tabs is then divided into banks, according to how the actual partition is organized in the Nord Stage EX. The individual samples, programs or patches will be referred to as "sounds" in this manual and in the application itself.

Tip: Press Ctrl+Tab on the computer keyboard to cycle between the three tabs.

In order to make organizing the content easier, you can have two lists open by selecting Dual View in the View menu. This makes it easy to e.g. drag a sound from one bank to another. If a program or a patch is dragged and then dropped upon another program/patch in the lists, they will trade places.

• Piano sounds can not be moved between the banks in the piano partition.

The bank lists can be ordered according to location, name, size, version and date, in ascending and descending order. Just click on a headline to select a preferred view.

Partition Memory Indicator

The memory indicator at the bottom of the window indicates how much memory is being used in the selected partition. The red area shows the used memory, green indicates space that is available for new sounds.

Right-clicking

If you right-click on a sound, a context menu will provide the following options:

Select in Instrument

This will select the chosen sound in the Manager list, to be instantly accessible on the Nord Stage.

Upload

This will upload the selected sound from the Nord Stage to the computer hard drive in a folder of your choice.

Download

This is only available if you right-click on an empty location that does not contain a sound. This allows you to choose a file on the hard drive, to be downloaded to the location in the Nord Stage EX.

Note: When a Nord Stage EX leaves the factory, every program or synth location is filled with patches. You need to use the Delete function to get any empty locations, which are displayed without any characters in their name.

Rename

This allows you to rename a Program or a Synth patch. Characters supported are: a-z, A-Z, 0-9 and a hyphen (-) and the name can contain up to 16 characters. Any other characters will not be displayed in the Sound Manager lists or in the Stage display.

• Pianos cannot be renamed, this option will not be available if you right-click on a Piano.

Delete

This will delete the selected sound(s) from the Nord Stage EX memory.

File Formats

The Nord Sound Manager v5.x creates and uses files with the following extensions:

• .npno - These are the piano samples.

• .nspg - These are the Program files. The file name will also be the name of the Program that is shown in the Nord Stage EX display.

• .nss - This is the extension for the Synth patches. The file name will also be the name of the Synth patch that is shown in the Nord Stage display.

• .nsb - This is the extension used for the Nord Stage backup files.

Just as any other computer file on your hard drive, these files may be renamed, emailed, copied, moved, lost or even stored in a safe location if an evil computer crash suddenly decides to take your hard drive for ride.

The Quick Tour

Let's get acquainted with some of the functions in the Nord Sound Manager.

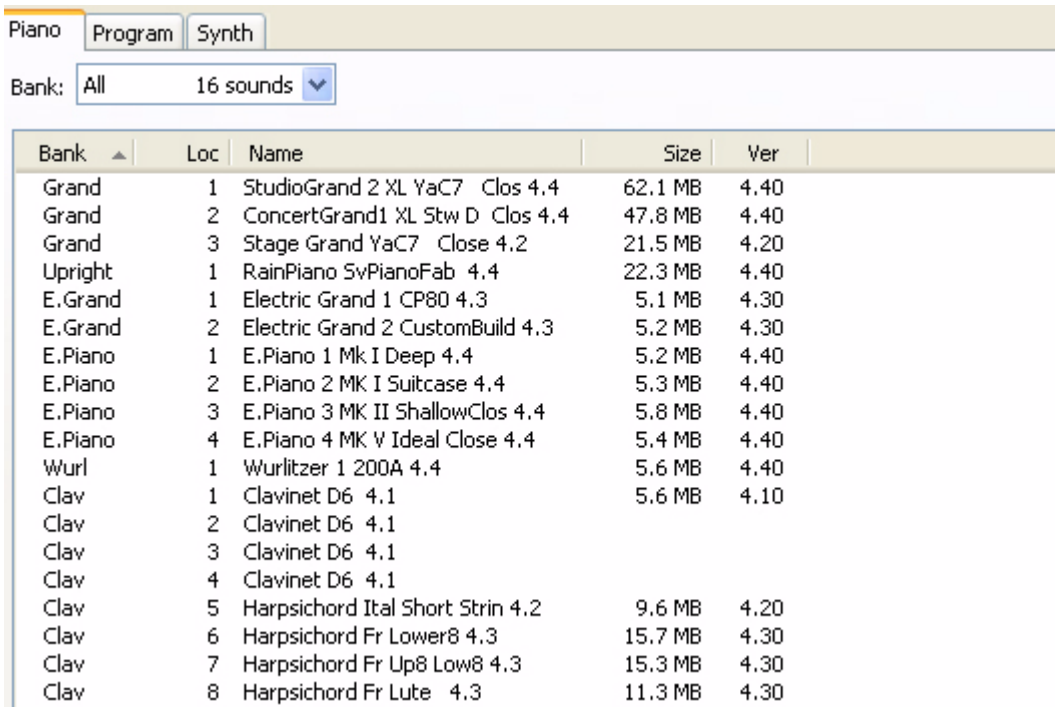
Transfer piano samples to the Stage

When the Nord Stage EX leaves the factory, the Piano partition is filled with piano sounds. In order to be able to download additional pianos, you may have to delete some of the factory pianos. If you ever want to restore any deleted pianos, they are available on the DVD that was included with the Nord Stage EX, or available as a download from the www.nordkeyboards.com web site, in the Nord Stage download area.

Deleting a piano from the Nord Stage EX

1. Connect the Nord Stage EX to the computer and launch the Nord Sound Manager 4x.

2. The Piano tab will open and the current content of the Piano partition in the Stage will be displayed.



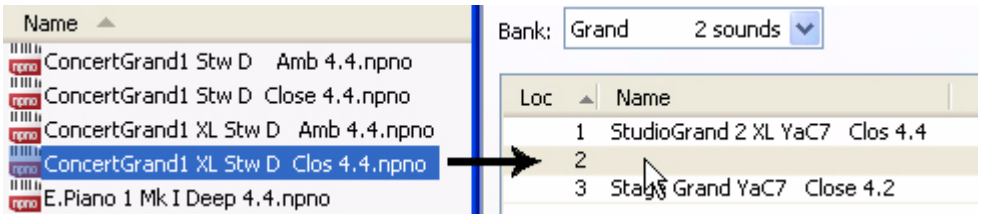
Bank	Loc	Name	Size	Ver
Grand	1	StudioGrand 2 XL YaC7 Clos 4.4	62.1 MB	4.40
Grand	2	ConcertGrand1 XL Stw D Clos 4.4	47.8 MB	4.40
Grand	3	Stage Grand YaC7 Close 4.2	21.5 MB	4.20
Upright	1	RainPiano SvPianoFab 4.4	22.3 MB	4.40
E.Grand	1	Electric Grand 1 CP80 4.3	5.1 MB	4.30
E.Grand	2	Electric Grand 2 CustomBuild 4.3	5.2 MB	4.30
E.Piano	1	E.Piano 1 Mk I Deep 4.4	5.2 MB	4.40
E.Piano	2	E.Piano 2 MK I Suitcase 4.4	5.3 MB	4.40
E.Piano	3	E.Piano 3 MK II ShallowClos 4.4	5.8 MB	4.40
E.Piano	4	E.Piano 4 MK V Ideal Close 4.4	5.4 MB	4.40
Wurl	1	Wurlitzer 1 200A 4.4	5.6 MB	4.40
Clav	1	Clavinet D6 4.1	5.6 MB	4.10
Clav	2	Clavinet D6 4.1		
Clav	3	Clavinet D6 4.1		
Clav	4	Clavinet D6 4.1		
Clav	5	Harpsichord Ital Short Strin 4.2	9.6 MB	4.20
Clav	6	Harpsichord Fr Lower8 4.3	15.7 MB	4.30
Clav	7	Harpsichord Fr Up8 Low8 4.3	15.3 MB	4.30
Clav	8	Harpsichord Fr Lute 4.3	11.3 MB	4.30

3. Select the piano to delete and press the Delete icon in the toolbar. You can also right-click on the sound and choose the Delete option or use the backspace or delete keys on the computer keyboard. You will be asked to confirm your intentions and then the piano in the Stage EX will be deleted.

Download a new piano

1. **Using drag and drop**: Open the folder on the computer hard drive where the new piano is located.

2. Make sure that the Sound Manager window and the folder are visible on the screen.


Name
ConcertGrand1 Stw D Amb 4.4.npno
ConcertGrand1 Stw D Close 4.4.npno
ConcertGrand1 XL Stw D Amb 4.4.npno
ConcertGrand1 XL Stw D Clos 4.4.npno
E.Piano 1 Mk I Deep 4.4.npno
Bank: Grand 2 sounds
Loc Name
1 StudioGrand 2 XL YaC7 Clos 4.4
2
3 Stage Grand YaC7 Close 4.2

3. Drag the new piano to the white area or to an empty location in the Sound Manager piano list.

4. The Clean Deleted Space process will start to prepare the memory and then the new piano will be downloaded to the Stage. If there isn't enough free space, a message will appear in the lower left text area in the Sou.

• The pianos are categorized and can only be added to the correct bank; electric pianos can not be added to the grand bank, the grand's cannot be dropped in the clavinet bank etc.

Tip: If the Organize option is active in the View menu, you can drop a sound on any free location in the bank. If this function is not active, the new sound will be automatically placed at the first free location in the bank. The various locations are selected using the Type selector on the Nord Stage.

1. **Using the Toolbar or menu command**: Click on the Sound Down icon in the toolbar. The same command is also available in the File menu: Sound Download (Ctrl-D)

2. Browse to the folder on the hard drive where the desired sound is located, select it and click Open. The piano will now be added to its parent bank.

These methods can also be used with any individual Programs or Synth patches that you wish to add.

Upload one or several sounds from the Nord Stage to the hard drive

1. Select the desired partition that holds the sounds that you wish to store on the computer hard drive.

2. Select the bank and the sound. Shift-click will allow you to select several consecutive sounds; Ctrl-click will allow you to select nonconsecutive sounds. Here we have selected a few of the Programs:

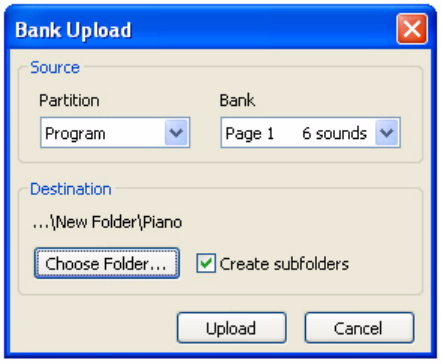
Page 1	5	Deep E Piano	1.00
Page 1	6	Shallow E Piano	1.00
Page 2	1	E Piano Mark V	1.00
Page 2	2	Wurlitzer	1.00
Page 2	3	Clavinet 1	1.00
Page 2	4	Clavinet 2	1.00
Page 2	5	Clavinet 3	1.00
Page 2	6	Clavinet 4	3.14
Page 3	1	70s Rock Grand	1.00
Page 3	2	Ambient Grand	3.14
Page 3	3	FosterPiano	3.14

3. Click on the Sound Up tool or right-click on the selected sound(s) and select Upload. The dialogue will prompt you to browse to the desired destination folder on the hard drive. The upload process may take a few moments depending on the size of the sounds.

Upload a complete bank of sounds from the Stage to the hard drive

1. Make sure that the desired partition and bank is focused in the Nord Sound Manager. You will also have the opportunity to change the source bank in an upcoming dialogue.

2. Click on the Bank Up tool, or select the File/Bank Upload menu command (Ctrl-Shift-U). Verify that the source bank is correct and browse to the desired destination folder on the computer hard drive.



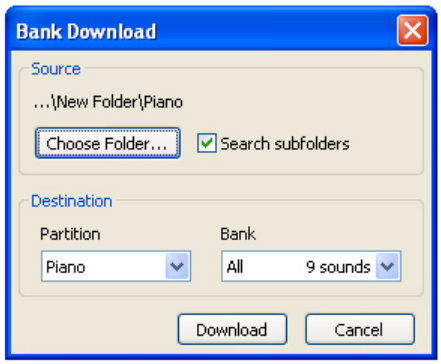
You can also select All at the bottom of the bank list drop down. This will upload the entire content of the partition to the computer hard drive.

If the Create Subfolders option is checked, a folder structure - partition/bank/sounds - will automatically be created in the destination folder.

Download a complete bank of sounds from the hard drive to the Stage

1. Click on the Bank Down tool, or select the File/Bank Download menu command (Ctrl-Shift-D).

2. Verify that the destination bank is correct and browse to the desired source folder on the computer hard drive.



• **Note**: When you click on Download a dialogue appears to inform you that the content of the destination bank in the Nord Stage will be replaced with that of the source file.

If you select All in the destination bank drop down, you can replace all the sounds in a partition with those on a folder structure on the hard drive. If Search Subfolders is active, you can browse to the top folder of a structure as the parent of the source files.

Organize the Program or Synth partitions

By using drag and drop, you can organize the content of the Program and Synth partition.

1. Make sure that Dual View and Organize is activated in the View menu.

2. Select the banks you wish to use as the destination and the source.

3. Select and drag a sound from the destination bank to the source bank. If you drop a sound on a free location, the sound will be moved from the source location. If you drop on a location that is occupied, the two sounds will trade places.

Search Box

1. By entering one or several characters in the Search Box, you can filter out the content that is presented in the lists.

This provides you with a quick way to find duplicate programs, all programs made by the mysterious AD (Ake Danielsson) or all programs with e.g. the phrase “string” in their names.

Auto Select

By clicking on the Auto Select icon in the toolbar, you toggle the Auto Select function on or off. When this is activated and you scroll through the Pianos, Program or Synth patch list using the computer keyboard arrow keys, these will automatically be selected in the Nord Stage EX.

Double-clicking on a Piano, Program or Synth patch will also select it in the Electro 3.

Nord Sound Manager reference

Toolbar

Organize

When this option is active, the lists will show all the available locations in the selected partition/bank and not only the occupied ones. This will for instance make it easier to drag a file to a specific free location in the middle of the list. If this is inactive, only the occupied locations will be shown.

Dual View

When this option is checked, the window will be divided in two lists. The two lists makes it easy to move programs from one location to another. You can make the lists show separate banks with the dropdowns. Rearranging programs is simply a matter of drag and drop. Drag a program from one bank/list to another bank/list in either direction.

Auto Select

With this function active, scrolling through the program list with the computer keyboard arrow keys will automatically select the programs in the Nord Stage EX.

Sound Up

Use this function to upload one or several sounds from the Nord Stage to the computer hard drive.

Sound Down

Use this function to download one or several sounds from the computer hard drive to the next available location in the selected partition.

Rename

Allows you to rename a sound. 16 characters can be used, and the supported characters are: a-z, A-Z, 0-9 and the hyphen (-). Any other characters will not be displayed in the Sound Manager lists or in the Stage display.

• Pianos cannot be renamed so this function is not available if you have selected a piano.

Delete

Allows you to delete one or several selected sound. You will be asked to confirm your intentions. You may also use the delete or backspace key on the computer keyboard to perform the deletion.

> **Note**: Any Program in the Nord Stage that used that particular piano or synth patch that you deleted will probably sound very different, since it will be missing an important component.

The space that a deleted Piano occupied is not immediately available to other pianos, even though it is gone from the list and its location is free. The Flash memory needs to be cleaned to free up the space where the deleted sounds have been. When you add a new piano sample the cleaning process will be initiated automatically. You also have the option to manually start the cleaning process with the Clean Deleted Space command from the File menu.

Note: A flashing number in the Nord Stage EX piano type LED indicates that the Piano location that the current Program tried to use is not available in the Flash memory. Select another piano type or download the missing piano sample to the Stage.

Bank Up

This function will upload an entire bank of piano samples, programs or synth patches to the computer hard drive. The default source will be the currently active bank, but you may choose another partition and bank if you wish. Click on the Choose Folder button to select the destination on the hard drive.

If the Create Subfolders option is checked, a folder structure - partition/bank/sounds - will automatically be created in the destination folder.

Note: If a folder with the same name as the source partition/bank already exists in the location on the hard drive, this folders entire content will be replaced by the uploaded files from the Nord Stage

Bank Down

This function will download an entire bank of pianos, programs or synth patches from the computer hard drive to the Nord Stage. The default destination will be the currently active bank, but you may choose another partition and bank if you wish. Click on the Choose Folder button to select the source on the hard drive.

Note: The destination bank in the Stage will be replaced by the content of the source folder.

Backup

This will make a backup of all the pianos, programs and synth patches in the Nord Stage EX. The file that is created on the hard drive will have the extension .nsb.

Backing up the entire memory content in this manner will take some time, depending on the amount of pianos in the Nord Stage. The Nord Sound Manager will suggest a location for the backup, the first time this function is activated (in My Documents/Nord Sound Manager files/). If you rather save the backup file elsewhere, use the file browser dialog to pick another location.

Tip: Backing up from the Nord Sound Manager is done in an incremental manner. Unless you change the name or the location of the back up file, only the content that have been changed since the previous backup will be saved.

Restore

To restore a previously saved backup file to the Stage EX, select this option and browse to a backup file on the hard drive (file extension .nsb) and click Open.

Important: The restore function will begin after you have clicked Open and confirmed your intentions in the dialogue. All the content of a connected Nord Stage will then be irrevocably replaced by the content of the backup file.

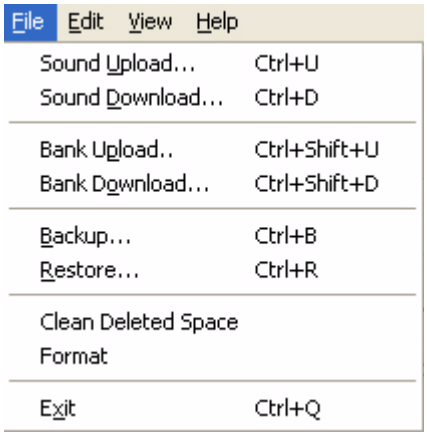
The Nord Stage EX memory has twice the capacity of the Nord Stage “classic”. This means that a backup from a Stage EX may not fit in a classic Stage if this backup exceeds the available memory capacity in the classic Stage.

Menus

In the Nord Sound Manager, the usual Windows and Mac OSX keyboard commands can be used. The menus can be accessed by pressing the Alt key and the underlined letter in the menu bar.

Most of the commands can also be accessed by pressing the Ctrl (on the Mac - Command) key together with the letter shown next to the command name in the menus.

File



Sound Upload (Ctrl+U)

Use this function to upload one or several sounds from the Nord Stage memory to a folder on the computer hard drive.

Sound Download (Ctrl+D)

Use this function to download one or several sounds from the computer hard drive to the next available location in the selected partition.

Bank Upload (Ctrl+Shift+U)

This allows you to upload an entire bank (pianos, programs or synth patches) to a folder on the computer hard drive. Select the desired source (partition and bank) and the destination folder.

If you select All, all the banks in the partition will be uploaded. The hierarchical folder structure of the chosen partition - partition/bank/sounds - will be automatically created in the destination folder.

Bank Download (Ctrl+Shift+D)

Use this function to download an entire bank (or all banks) from the hard drive to the Nord Stage. Please note that you need to match the format of the source and the destination, it is e.g. not possible to download a set of pianos to any of the synth patches banks.

Note: The content of the source folder will replace the selected bank in the Nord Stage.

Backup (Ctrl+B)

This will make a backup of all the Piano samples, Programs and the Synth patches in the Nord Stage. The file that is created on the hard drive will have the extension .nsb.

Backing up the entire memory content in this manner will take some time, depending on the sizes of the samples.

> **Tip**: Backing up from the Nord Sound Manager is done in an incremental manner. Unless you change the name or the location of the back up file, only the samples and/or programs/patches that have been changed since the previous backup will be saved.

Restore (Ctrl+R)

To restore a previously saved backup file to the Stage, select this option and browse to a backup file on the hard drive (file extension .nsb) and click Open.

> **Important**: The restore function will begin after you have clicked Open and confirmed your intentions in the dialogue. All the content of a connected Nord Stage will then be irrevocably replaced by the content of the backup file.

Clean deleted space

This function will clean up the space where any previously deleted pianos, programs or synth patches have been. This is done in order to make this deleted memory space available to new additions.

> **Note**: Cleaning is automatically done if you download a new piano, program or synth patch to the Nord Stage, but this menu command makes it possible to manually start the cleaning process.

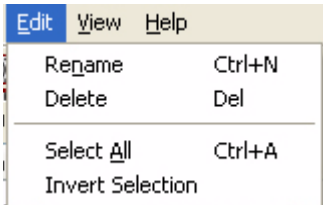
Format

This is a radical function; it will format the entire partition that is in focus. All the sound in the partition will be deleted. You will be asked to confirm your intentions.

Exit (Ctrl+Q)

Exits the Nord Sound Manager application.

Edit



Rename (Ctrl+N)

Allows you to rename a sound. 16 characters can be used, and the supported characters are: a-z, A-Z, 0-9 and the hyphen (-). Any other characters will not be displayed in the Sound Manager lists or in the Nord Stage display.

• Pianos cannot be renamed so this function is not available if you have selected a piano.

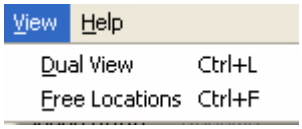
Delete

Allows you to delete a selected item(s) from the Nord Stage memory. You will be asked to confirm your intentions.

Select All (Ctrl+A)
Select all items in a bank.

Invert Selection
This will deselect the original selection(s) and then select all the other items in the list.

View



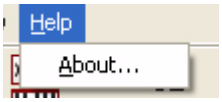
Organize (Ctrl+O)

When this option is checked, the lists will show all the available locations in the selected partition/bank and not only the occupied ones. This will for instance make it easier to drag a file to a specific free location in the middle of the list. If this is unchecked, only the occupied locations will be shown.

Dual View (Ctrl+L)
Select this option if you need to move items between different banks. Please note that both lists represent the actual memory content in the Nord Stage. Any actions that you make in either of the lists will affect the memory content in the Stage.

Auto Select
When this function is active, programs will be automatically selected in the Nord Stage EX when you browse through the Programs in the Manager list, with the computer keyboard arrow keys.

Help



About
Brings up the About box with a information regarding the version of the Nord Sound Manager. You will also see a list of compatible instruments and OS versions..

Tabs

Piano - Program - Synth

Use the tabs to select the desired partition. Type Ctrl+Tab on the computer keyboard to cycle between the three tabs. The drop down menu is used to select the desired bank within a partition. The content of the partition will be presented in the list.

Search Box

Enter a phrase to quickly present any samples or programs that contains the characters. Press Clear to clear the filtering and show all entries again.

Loc - Location

The banks are organized in locations; the amount of locations varies for the different bank types.

Name

The name of the item.

Size

Shows the file size of the Piano samples. This may be useful if you need to know how much space e.g. a particular piano occupies in the Piano partition. This unit is not shown in the Program or Synth lists.

Ver - Version number

Version number of the actual format of the pianos, programs or synth patches.

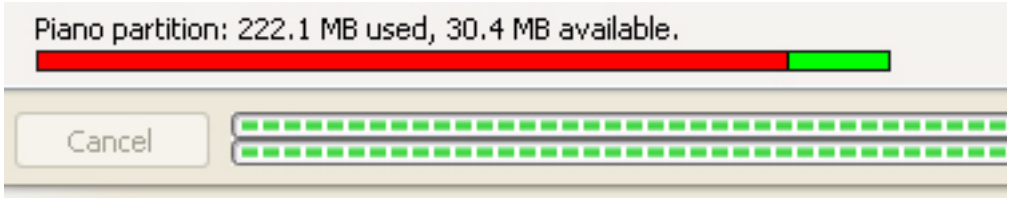
- Please note that pianos in the .npno format, 4.x or 5.x. programs or synth patches cannot be used with a Stage that has an older version 2.x or 3.x operating system.

Info

This area may contain error information about broken, corrupted or rejected files, if e.g. something has happened with a particular piano in the Stage EX.

Footer area

The footer area is located at the bottom of the Nord Sound Manager window.



Partition Memory Indicator

This indicates the usage of the selected partition's memory. The red area shows the used memory and the green area indicates space that is available for additional sounds.

Cancel button

Use this function if you need to cancel a process that is in progress. Certain functions like e.g. a restore process cannot be cancelled.

Progress bars

The two progress bars indicate the progress of an ongoing process. The upper bar shows the progression of the individual processes, and the lower indicates the status of the entire task.

Message area - Text area

The left part of the text area will present any confirmations or error messages from the Nord Sound Manager.

The right part will indicate of a Nord Stage EX is connected to the computer and in communication with the Nord Sound Manager. The OS version of the Stage will also be presented here.

Updates and piano samples

Please visit our website at http://www.nordkeyboards.com to download any updates of the Nord Sound Manager and sounds that have been released for the Nord Stage EX. These items will be available as free downloads in the Nord Stage EX download area.

14. MIDI functions

About the MIDI implementation

The following MIDI messages can be transmitted and received from Nord Stage EX:

Note On/Off

• Note On and Note Off messages are transmitted and received.

Pitch Bend

• Pitch Bend messages are transmitted and received by Nord Stage EX.

Controllers

On the MIDI Menu (see page 68), you can select if the Nord Stage should transmit and/or receive Control Change messages.

• If you have an Control/Expression pedal connected to the **Organ Swell Input**, this is transmitted and received as Controller 4.

• If you have an Control/Expression pedal connected to the **Control Pedal Input**, this is transmitted and received as Controller 11 (Expression). By using the Morph function you can control most of Nord Stage EX's parameters with a Control pedal.

• If you have a sustain pedal connected to the **Sustain Pedal Input**, this is transmitted and received as Controller 64 (Sustain Pedal).

• If you have a sustain pedal connected to the **Rotor Speed Input**, this is transmitted and received as Controller 90.

• Almost all other controls (knobs and buttons) on the front panel are also transmitted and received as Control Change messages. This can be used to record your actions on the front panel into a MIDI sequencer. For a full list of which parameters correspond to which Controller number, see the MIDI implementation chapter on page 90.

Keyboard Velocity

Nord Stage EX can transmit and receive Keyboard Velocity messages. Organ sounds will always be played back at nominal level regardless of incoming MIDI Velocity data. Release velocity is transmitted, but ignored on MIDI In.

Aftertouch

The Nord Stage EX keyboard can transmit Aftertouch messages (sometimes called channel pressure). The player can apply more pressure on a key while it is down; and this will generate a signal that can be used to control parameters - see "About Aftertouch" on page 62.

Program Change

On the MIDI Menu (see page 68), you can select if the Nord Stage should send and/or receive Program Change messages.

When you select a Program, a Program Change message is transmitted via MIDI on the active Panel MIDI Channel. If a Program Change message is received on any of the Panel A/B MIDI Channels, Nord Stage EX will change Program accordingly.

Note! A program change on either of the two Panel MIDI Channels will affect both Panels.

The 126 Program locations send and respond to MIDI Program Change values 0-125. Live buffers 1-2 correspond to MIDI Program Change 126-127.

MIDI SysEx (System Exclusive)

Single Programs/Synth sounds or all Programs/all sounds can be transmitted and received as a System Exclusive dump (see "Sending Program dumps" on page 88).

Using Nord Stage EX with a sequencer

Connections

1. Connect the MIDI Out on the Nord Stage EX to the MIDI In on your sequencer.

2. Connect the MIDI Out from your sequencer to the MIDI In on the Nord Stage EX.

Make sure that the Nord Stage is configured to respond to Program Change and Control Change MIDI messages (see the "MIDI menu" on page 68).

Local On/Off

Local Off should be used when you use a sequencer to record and play back from Nord Stage EX. Since the sequencer echoes back incoming MIDI data, Nord Stage EX will respond normally to your playing and knob tweaking via the MIDI "loop". If you use Local On with a sequencer setup as described above, this would cause "double-triggered" notes when you play; both from the keyboard internally and via the MIDI "loop". Therefore, always use Local Off when used in this way together with a sequencer.

Local On/Off is set on the "MIDI menu" on page 68.

MIDI channel

Each Panel can respond its own MIDI channel. This is convenient when you want to play split and layered sounds. If you want to control each instrument separately, you can assign an individual MIDI channel to each of the six instruments of the Nord Stage. The MIDI channels are set up on the MIDI menu - see "MIDI menu" on page 68.

Program Change

Usually you select a Program Change value for a track in the sequencer track settings. The 126 Program locations send and respond to Program Change values 0-125., while Live buffers 1-2 correspond to Program Change 126-127. Make sure the Program Change is sent on either of the Panel A/B MIDI channels.

If you want to record a Program Change message, activate recording in the sequencer and simply load the program once on the Nord Stage.

Controllers

When you record knob movements and button presses, make sure that the sequencer "echoes" the changes back on the correct MIDI Channel, or your changes won't have any effect.

Some notes about Controllers and "Chasing"

Consider a situation where you record a Controller message, e.g. a Drawbar opening, in the middle of your sequencer song. Then you "rewind" the sequencer to a position before the recorded Drawbar opening. The problem is that the Nord Stage's Drawbar will remain opened, although it really should be as it was before you recorded the opening. To solve such problems, several sequencers include a function called "Controller Chasing", which keeps track of Controller changes and tries to adjust the settings on the instrument according to the current position in the sequencer song.

However, in our example this wouldn't help much, because the Drawbar opening was the first Controller message recorded in the song. The sequencer has no information about the Drawbar setting before the recorded change, and therefore cannot "chase" the settings properly. To solve this, you could record a "snapshot" of all Controller settings of the Nord Stage EX Program(s) at the beginning of your sequencer song. See "Sending MIDI Controller dumps" below.

Program, Controller and Synth Sound dumps

To dump Program, Synth Sound or MIDI Controller SysEx via MIDI, either to another Nord Stage EX or for recording the data into another MIDI device, proceed as follows:

Sending Program dumps

1. Connect a cable from **MIDI Out** on the Nord Stage EX to MIDI In on the receiving device.

2. Set up the receiving device so that it accepts MIDI SysEx and MIDI Controller data.

3. Press **Shift** + **MIDI** and select the "Dump Program Source" menu item using the **Page -/+** buttons. Here you can select whether to send all Programs ('ALL'), or the currently selected program ('ONE') by using the **Value Dial**.

4. If needed, set the receiving MIDI device to "recording mode".

5. Press the **Store** button to send the dump to the **MIDI Out** of Nord Stage EX. The Store indicator will stop flashing once the dump has been sent.

To quickly send a dump of the current Program, press **Shift + Dump One** (the **Panel A** button).

Note: For Organ and Synth sounds, the complete settings for the sound will be dumped as MIDI SysEx. For Piano sounds, all parameters will be sent but NOT the actual instrument samples. Therefore, when dumping back a Piano sound, make sure the actual instrument samples are already loaded in the Nord Stage EX. Otherwise the parameters in the SysEx message will be applied to another available Piano instrument.

Sending MIDI Controller dumps

1. Set up as in steps 1 and 2 in the previous description.

2. **Press Shift** + **MIDI** and select the 'Send MIDI Ctrl" menu item using the **Page -/+** buttons. Select to send all Controllers from Panel A or Panel B by using the **Value Dial** or by pressing the corresponding **Panel** button.

3. Press the **Store** button to send the dump to the **MIDI Out** of Nord Stage EX. The **Store** indicator will stop flashing once the dump has been sent.

Sending Synth Sound bank dumps

You can perform a separate MIDI SysEx dump of the Synth memory banks. You can select to send a single sound from the currently active Panel, one of the category banks (Synth/Pad/Bass) or all banks at once:

1. Set up as in steps 1 and 2 in the preceding description.

2. **Press Shift** + **MIDI** and select the 'Dump Synth Sound" menu item using the **Page -/+** buttons. Select to send the synth patch from the active Panel, one synth category or all synth sounds by using the **Value Dial**.

3. Press the **Store** button to send the dump to the **MIDI Out** of Nord Stage EX. The Store indicator will stop flashing once the dump has been sent.

Receive MIDI SysEx Dumps

To receive a MIDI SysEx Dump, do like this:

1. Connect a cable from the MIDI Out on the transmitting device to **MIDI In** on the Nord Stage EX.

2. Initiate the transmission on the transmitting device.

If the dump contained all Programs (All), it will replace all Programs currently stored in the Nord Stage EX. If the dump contained only a single Program (One), it will be temporarily placed in the currently selected Program memory location. You will then have to store the Program manually to a memory location using the Store function (see "Storing Programs" on page 20).

Panic

If notes should hang using the Nord Stage EX in a MIDI setup, all you need to do is hold down the **Shift** button and press the **Panic** button in the Piano section. This will execute an internal All Notes Off, and reset certain parameters to their default values.

15. MIDI implementation

MIDI Controller list

The following is a list of the MIDI Controller numbers used for all **KNOBS** and **BUTTONS** on the front panel:

Nord Stage Parameter	MIDI Controller #
Organ Preset II	3
Organ Swell	4
Organ Drawbar 1	9
Organ Drawbar 2	14
Organ Drawbar 3	15
Organ Drawbar 4	16
Organ Drawbar 5	17
Organ Drawbar 6	18
Organ Drawbar 7	19
Organ Drawbar 8	20
Organ Drawbar 9	21
Organ Percussion Enable	22
Organ Type	23
Organ Vibrato Type	24
Organ Vibrato Enable	25
Organ Percussion Harmonic	26
Organ Percussion Speed	27
Organ Percussion Level	28
Organ PStick Enable	29
Piano Clav Filter 1	30
Piano Clav Filter 2	31
Piano Dynamics	33
Synth Glide Rate	34
Synth Glide Auto	35
Synth Voice Mode	36
Synth Unison	37
Synth Vibrato Mode	38
Synth Mod Envelope Attack	39
Synth Mod Envelope Decay	40
Synth Mod Envelope Mode	41
Synth Mod Envelope Velocity	42

Nord Stage Parameter	**MIDI Controller #**
Synth Oscillator Mode	43
Synth Oscillator Wave	44
Synth Oscillator Timbre	45
Synth Oscillator Timbre Amount	46
Synth Oscillator TimbreVelocity	47
Synth Filter Frequency	48
Synth Filter Resonance	49
Synth Filter Amount	50
Synth Filter Velocity	51
Synth Filter KBT (Keyboard tracking)	52
Synth Filter Type	53
Synth Amp Envelope Attack	54
Synth Amp Envelope Decay	55
Synth Amp Envelope Mode	56
Synth Amp Envelope Velocity	57
Synth EQ Gain Lo	58
Synth EQ Gain Hi	59
Effect 1 Type	60
Effect 1 Source	61
Effect 1 Amount	62
Effect 1 Rate	63
Effect 1 Enable	69
Effect 2 Type	70
Effect 2 Source	71
Effect 2 Amount	72
Effect 2 Rate	73
Effect 2 Enable	74
Delay Destination	75
Delay Amount	76
Delay Rate	77
Delay Feedback	78
Delay Ping Pong on/off	79
Delay Enable	80
AmpSim Type	81
AmpSim Destination	82
AmpSim Drive	83
AmpSim Bass EQ	84
AmpSim Mid EQ	85
AmpSim Treble EQ	86

Nord Stage Parameter	**MIDI Controller #**
AmpSim Enable	87
Rotor Destination	88
Rotor Drive	89
Rotor Speed	90
Rotor Stop	91
Rotor Enable	92
Compressor Amount	93
Compressor Enable	94
Reverb Amount	95
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Organ Enable Sustain Pedal	98
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Organ Level	100
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Organ KB Zone Assignment	102
Piano Enable PStick	103
Piano Enable Sustain Pedal	104
Piano Octave Shift	105
Piano Level	106
Piano Enable	107
Piano KB Zone Assignment	108
Synth Enable PStick	109
Synth Enable Sustain Pedal	110
Synth Octave Shift	111
Synth Level	112
Synth Enable	113
Synth KB Zone Assignment	114

MIDI Implementation Chart

Model: Clavia Nord Stage EX Eighty Eight/Seventy Six/Compact OS v4.x Date: 2008-12-09

Function	Transmitted	Recognized	Remarks
MIDI Channels	1 – 16	1 – 16	Individual channels for Panel A and B.
Velocity Note On/Off	Yes	Yes	Incoming Velocity data ignored for Organ. Release velocity sent but not received.
Aftertouch	Yes	Yes	Channel aftertouch only.
Pitch Bend	Yes	Yes	
Control Change	Yes	Yes	See “MIDI Controller list” on page 90.
Program Change	Yes	Yes	0-125, 126=Live1,127= Live 2
System Exclusive	Yes	Yes	See the MIDI Implementation section.

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